

Fig. 1

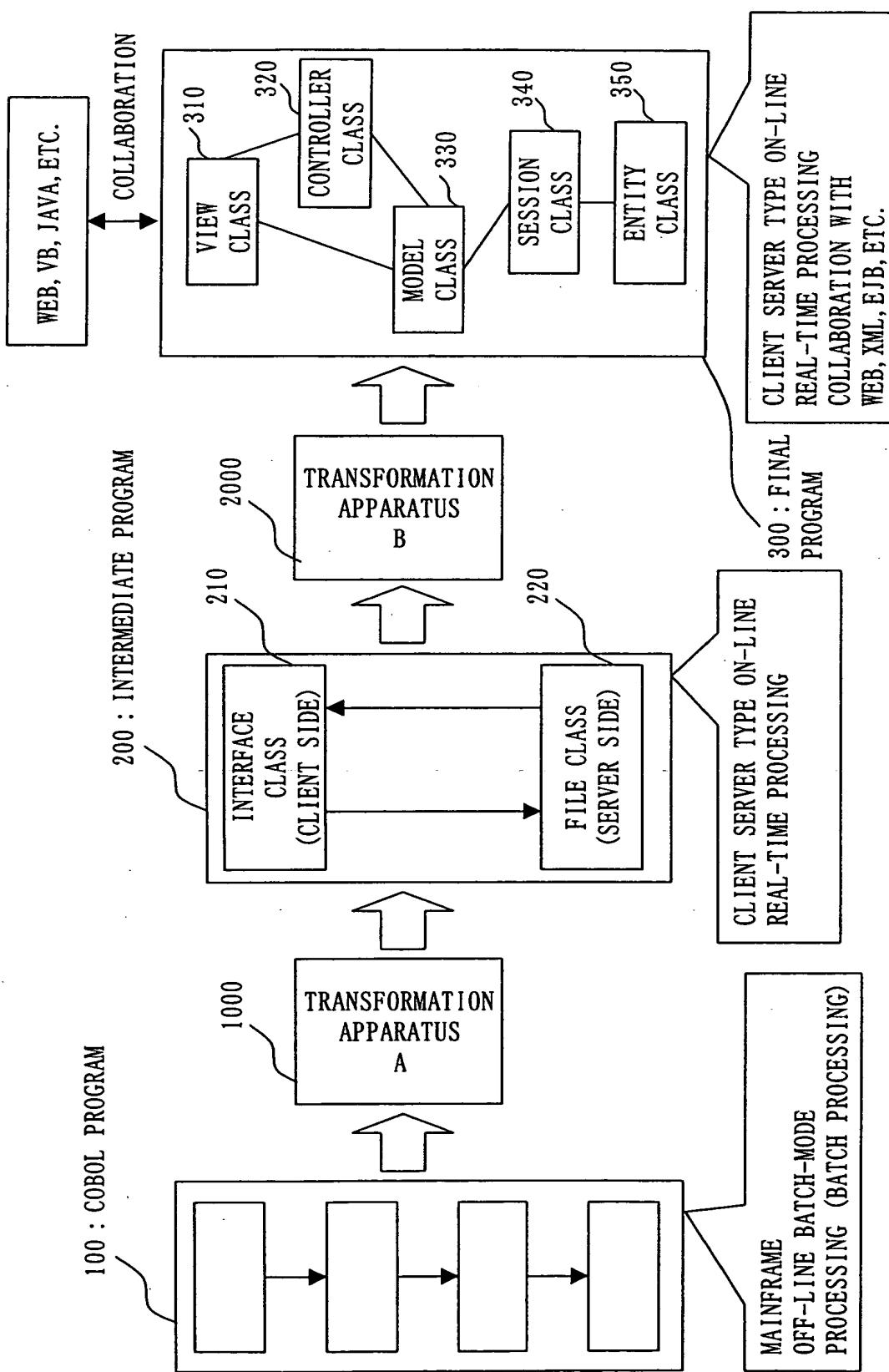


Fig. 2

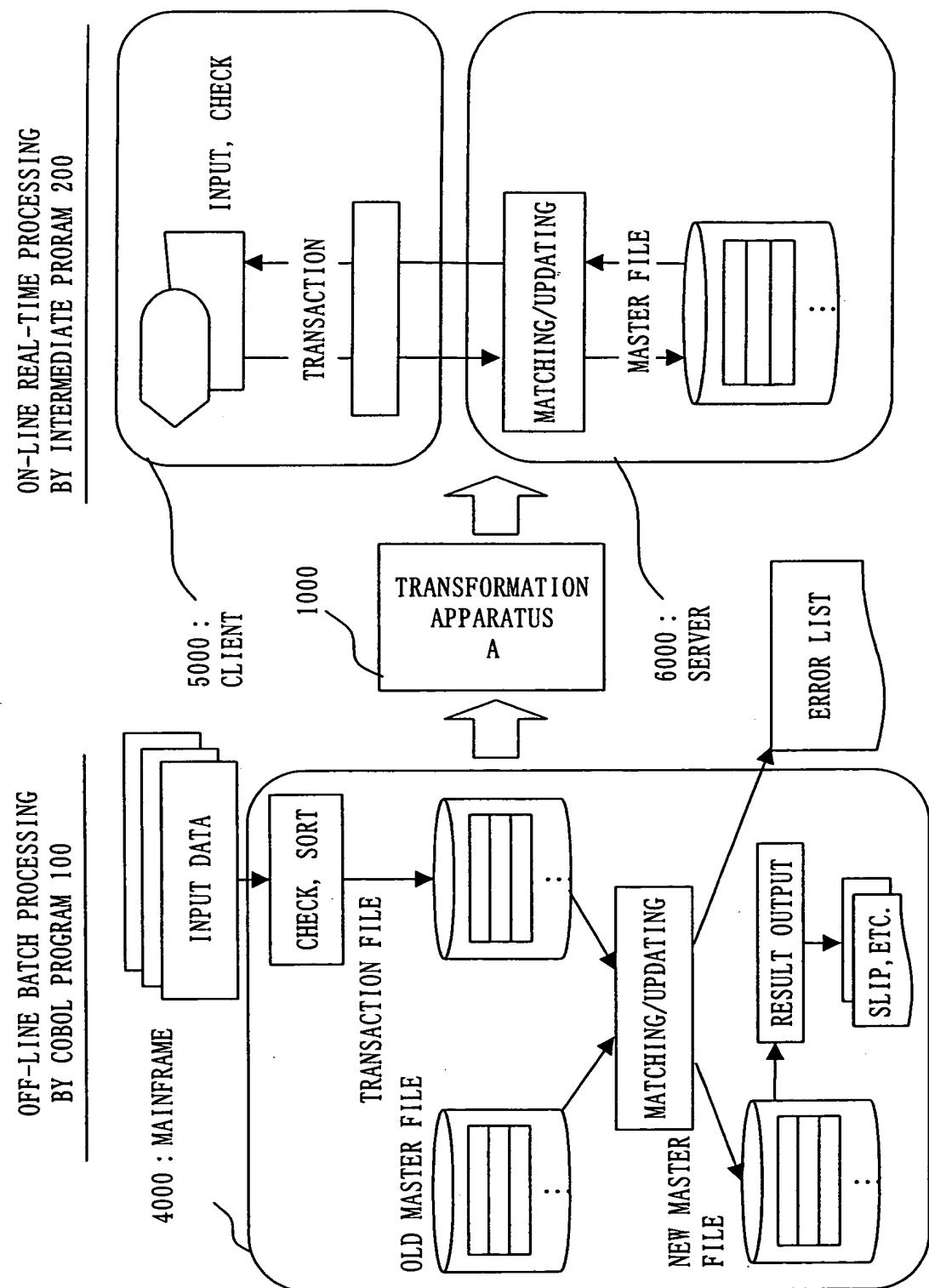


Fig. 3

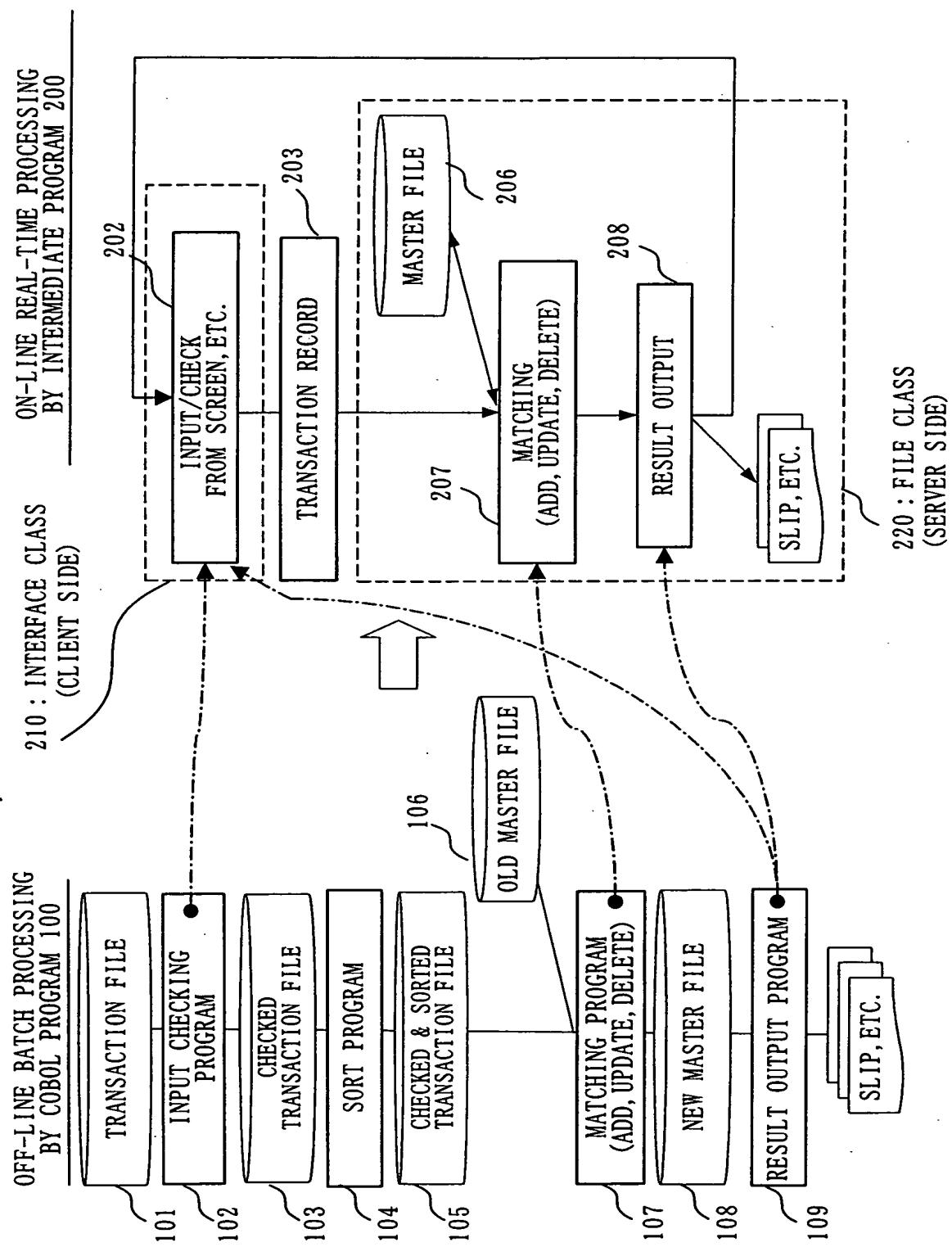


Fig. 4

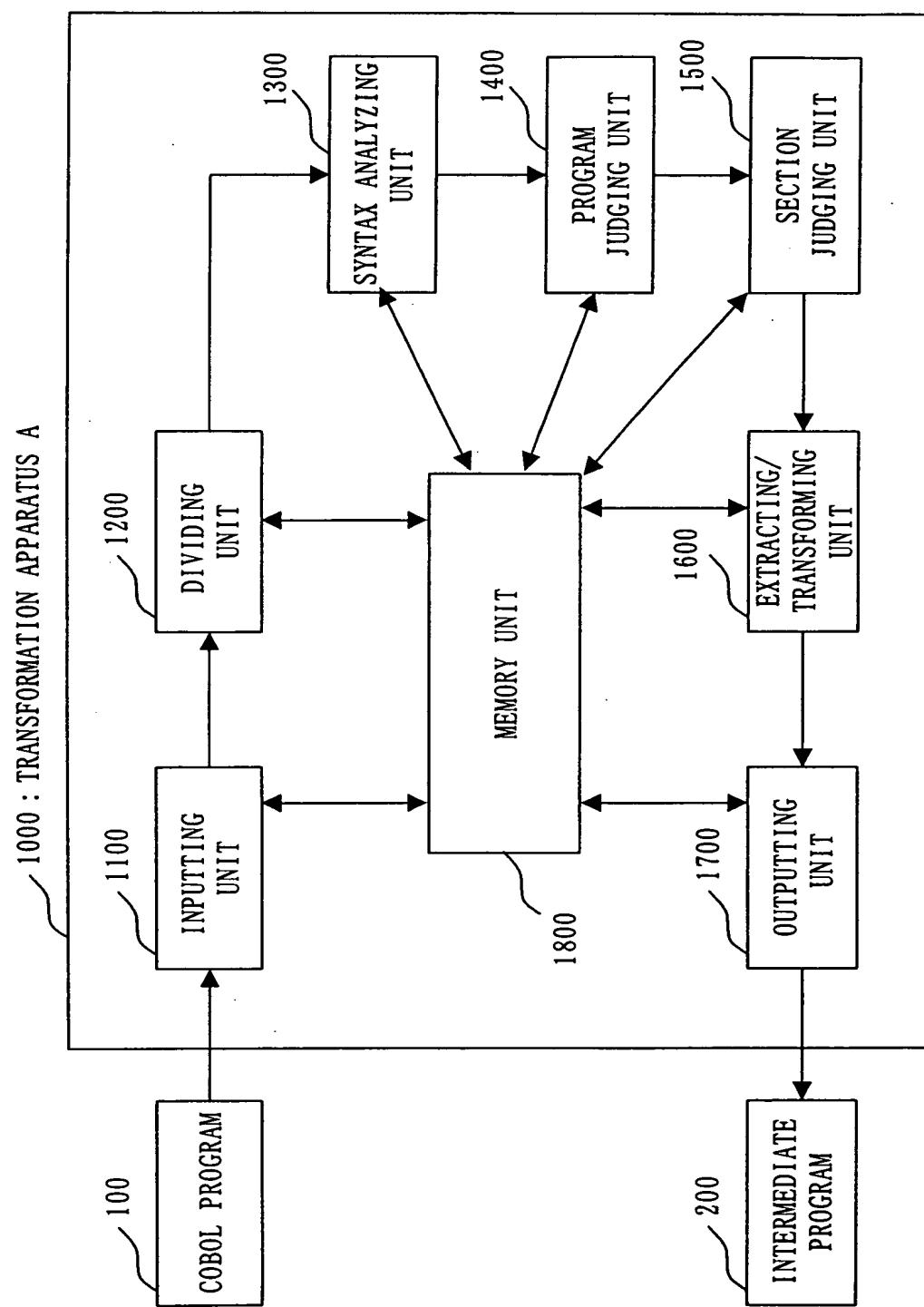


Fig. 5

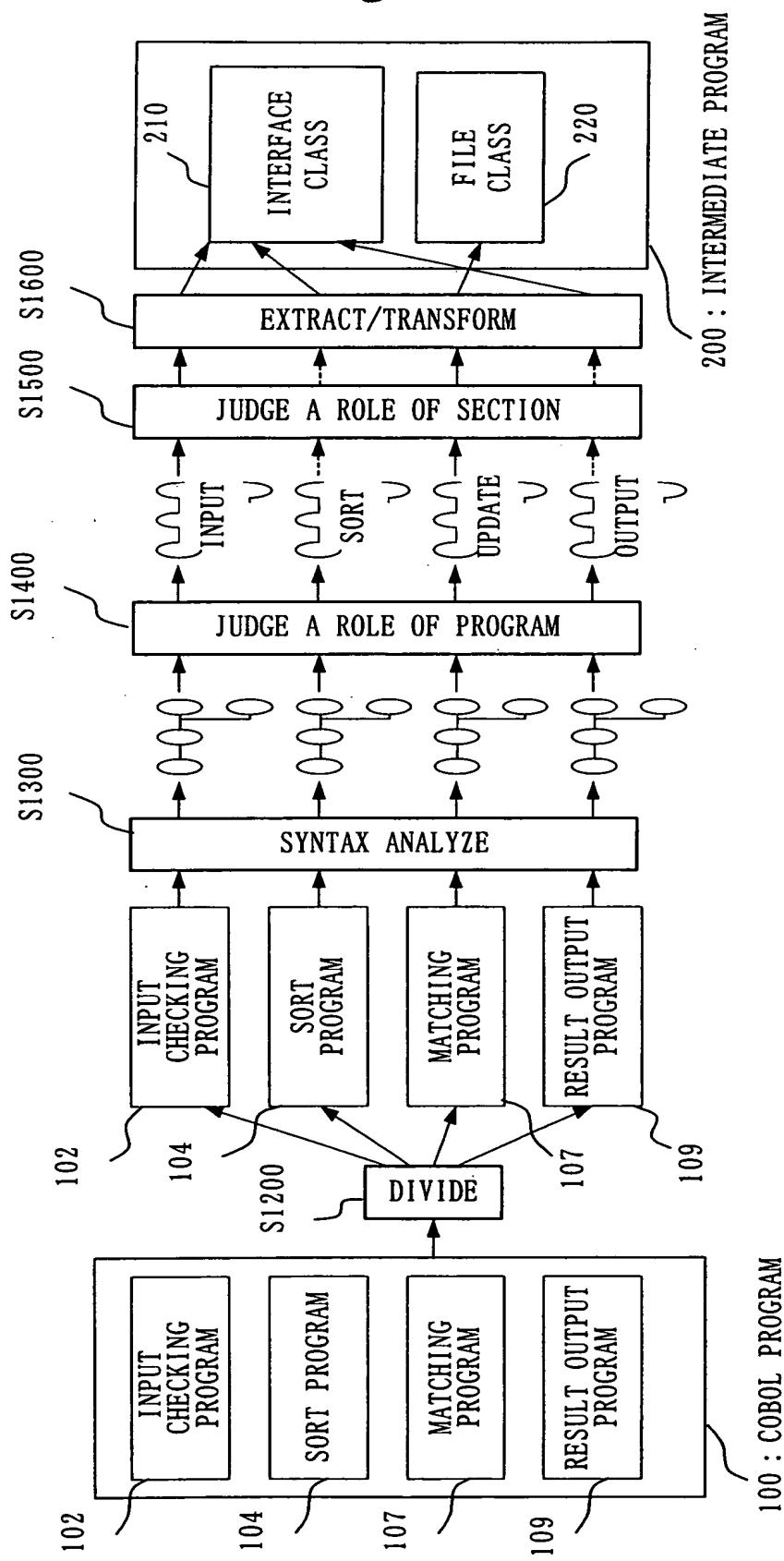
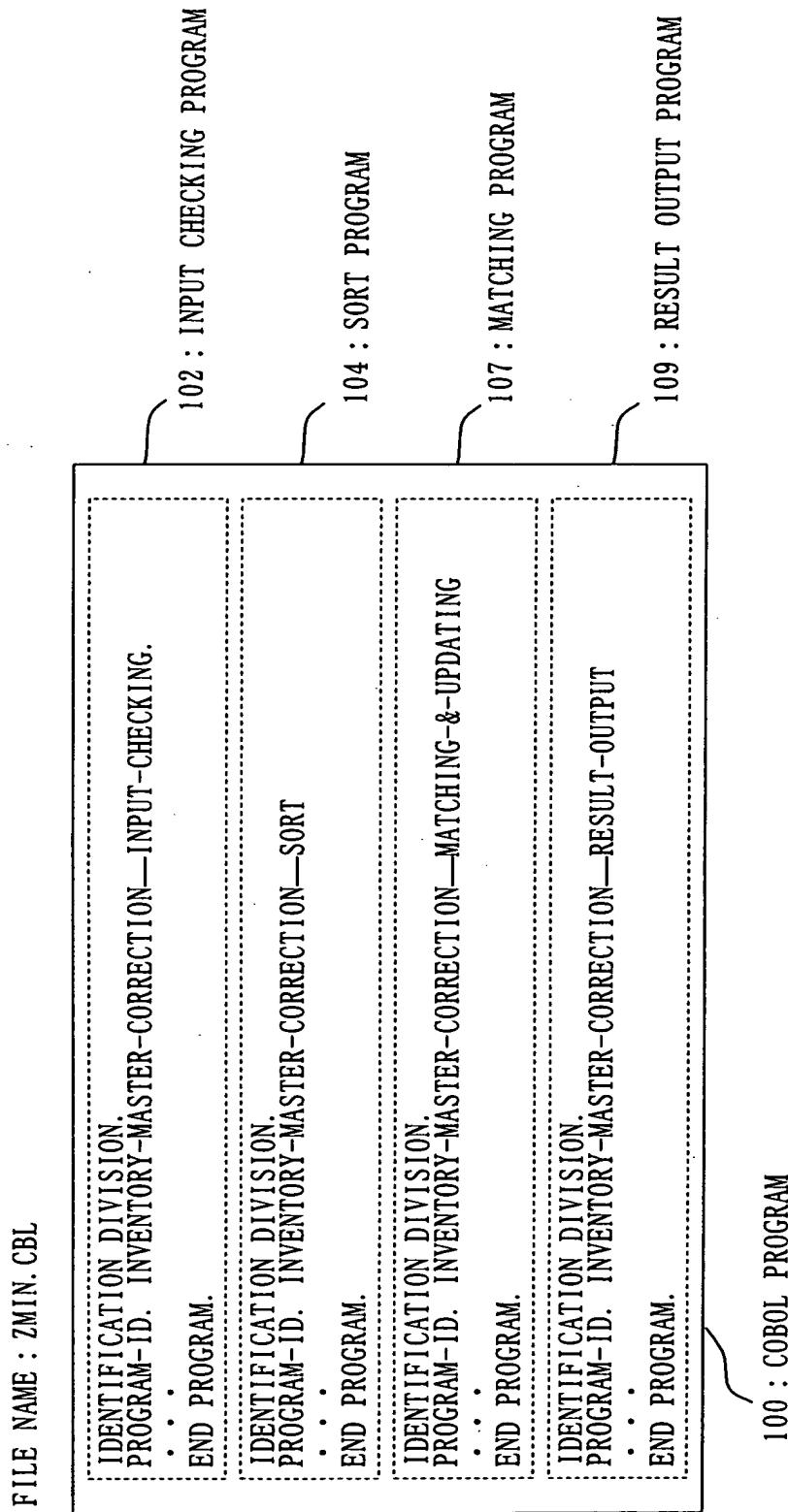


Fig. 6



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Fig. 7

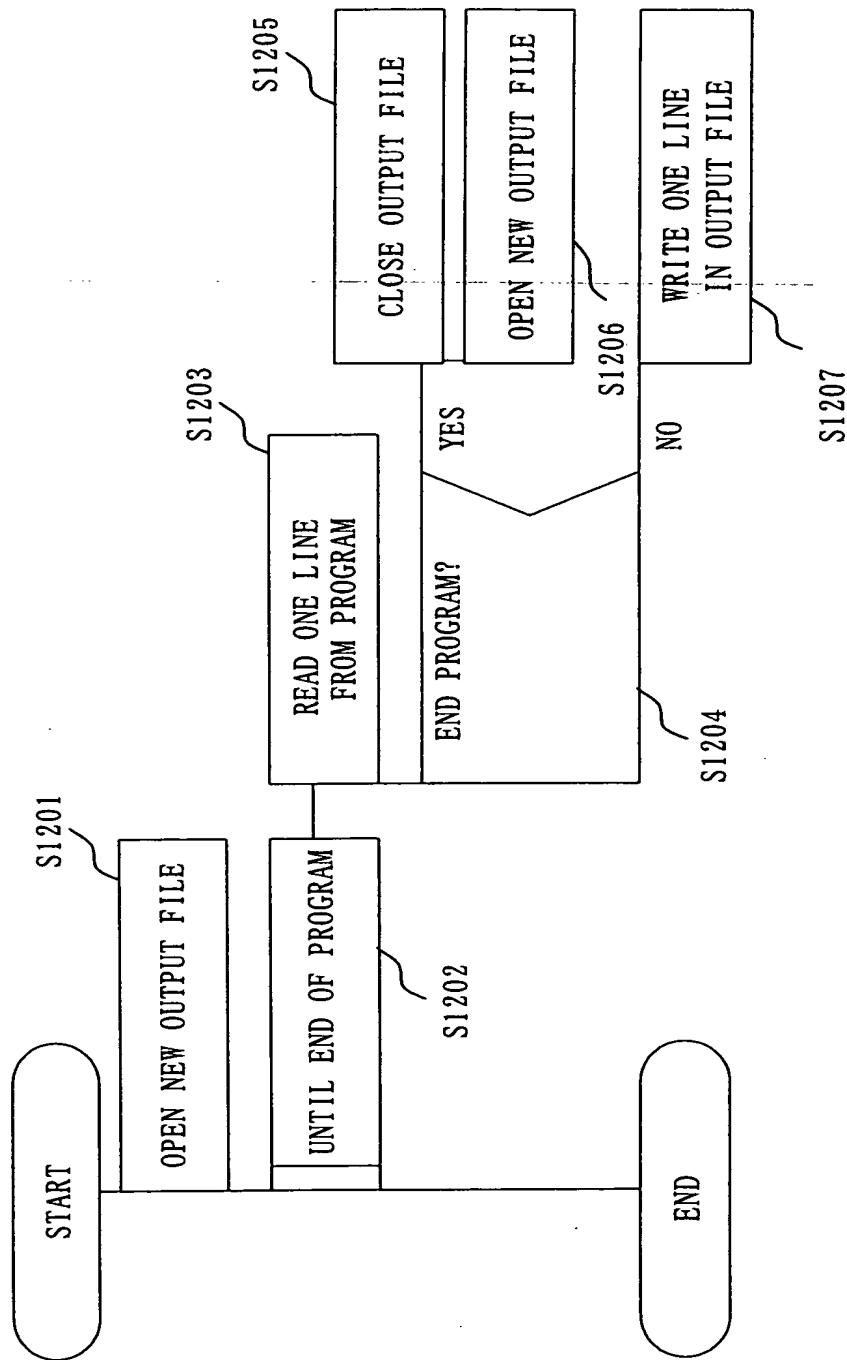
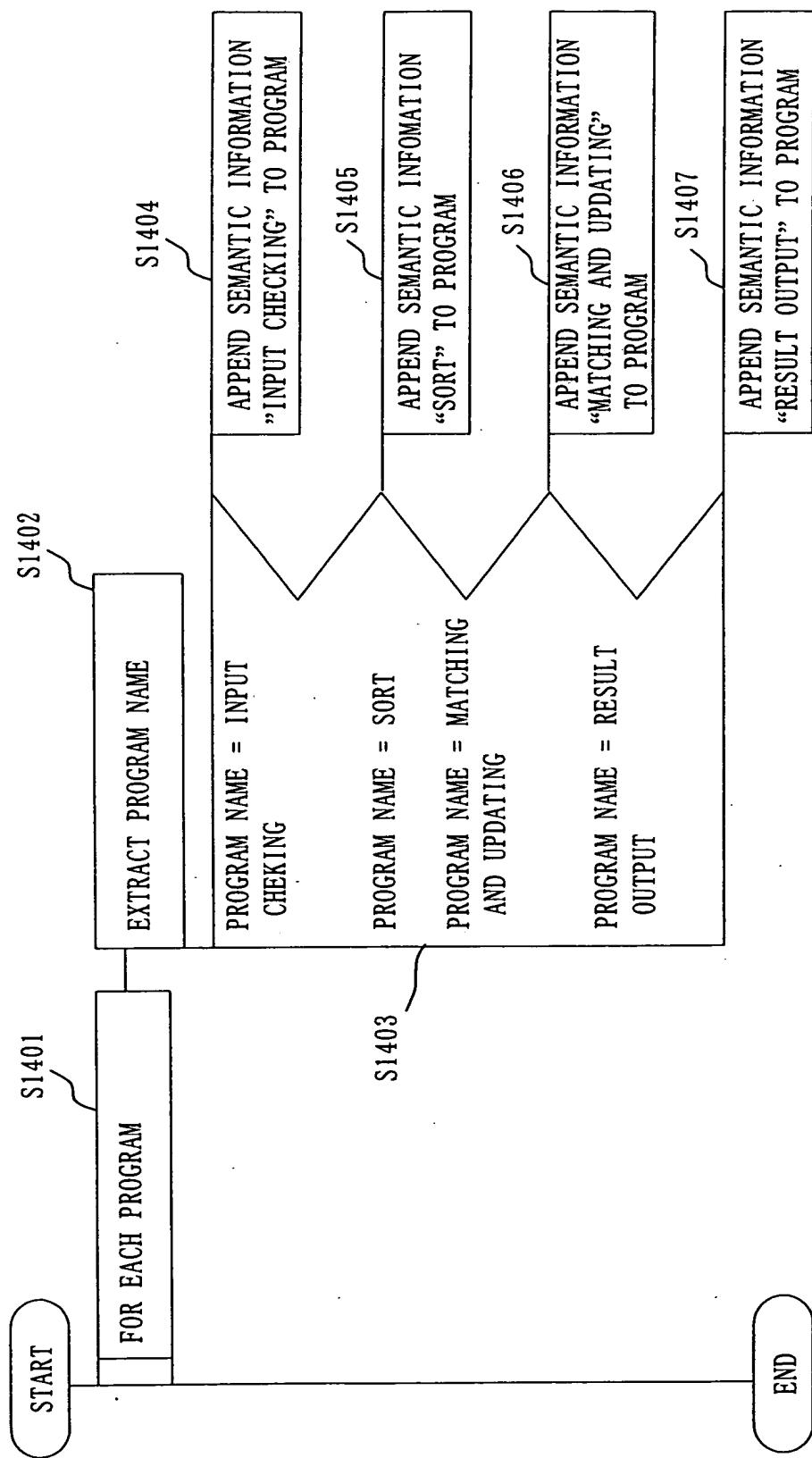
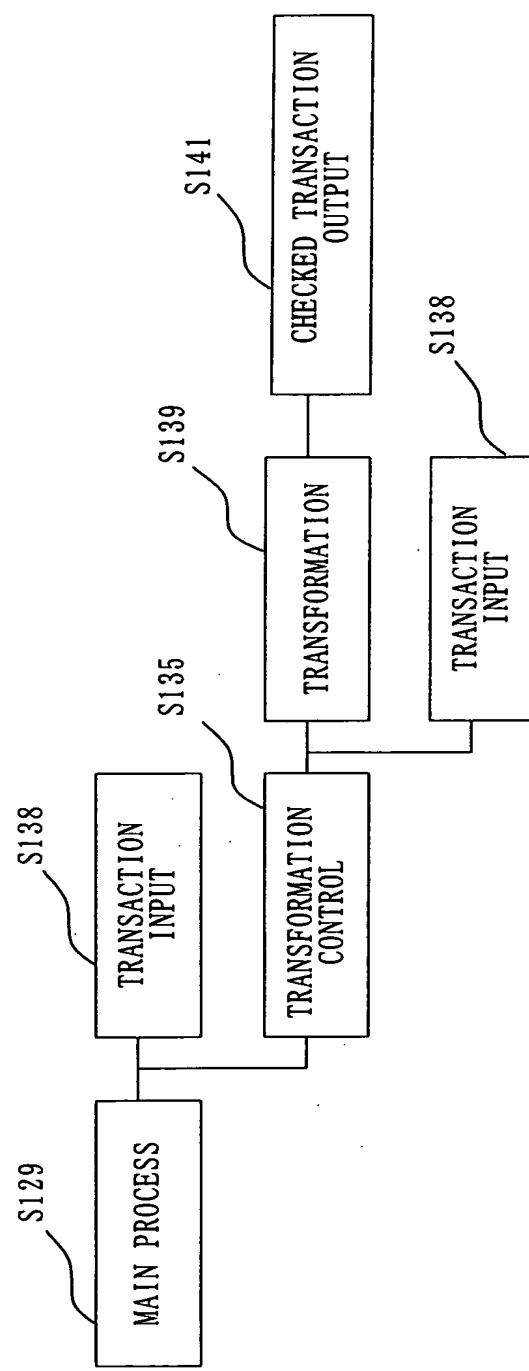


Fig. 8



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Fig. 9



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Fig.10

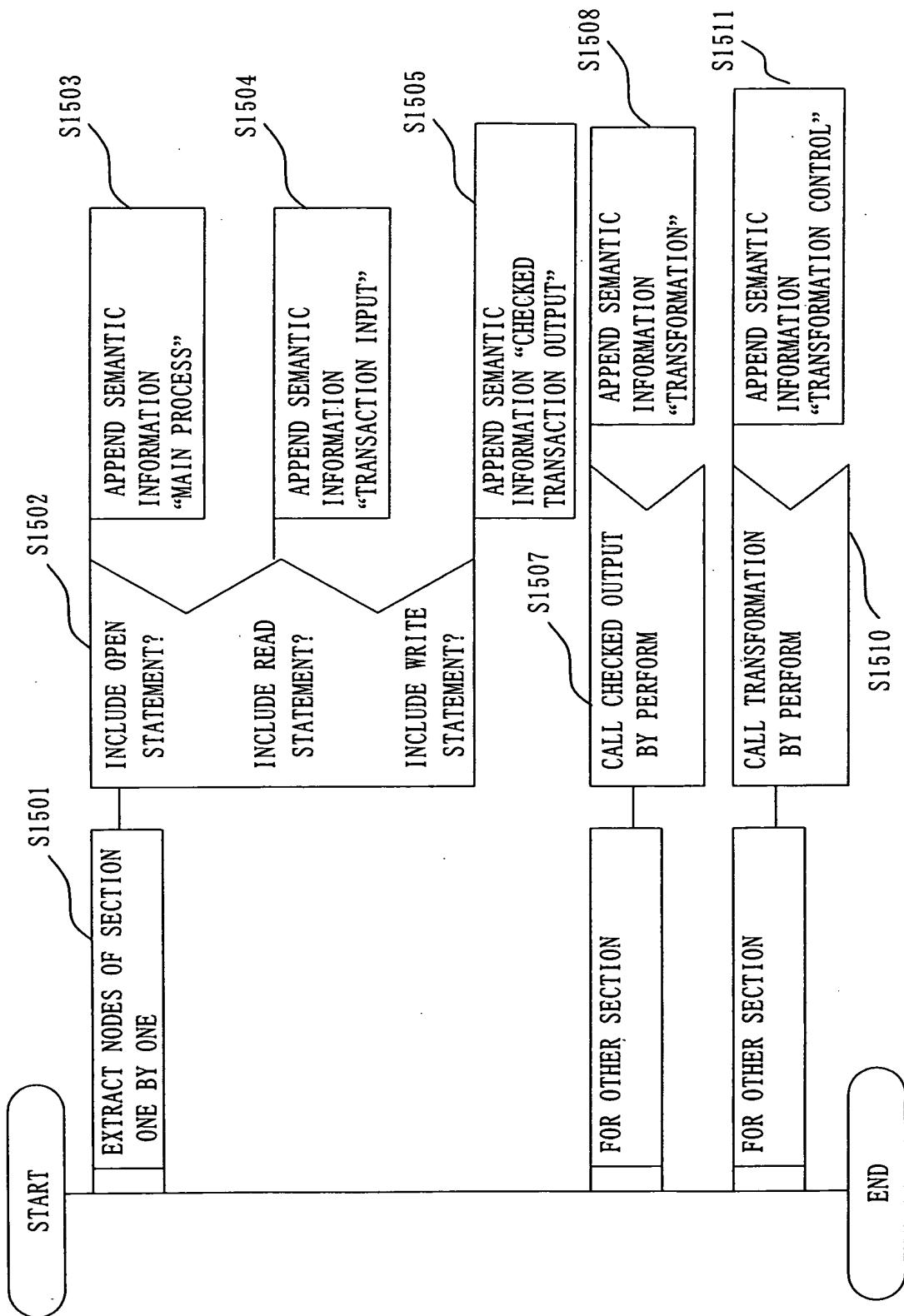
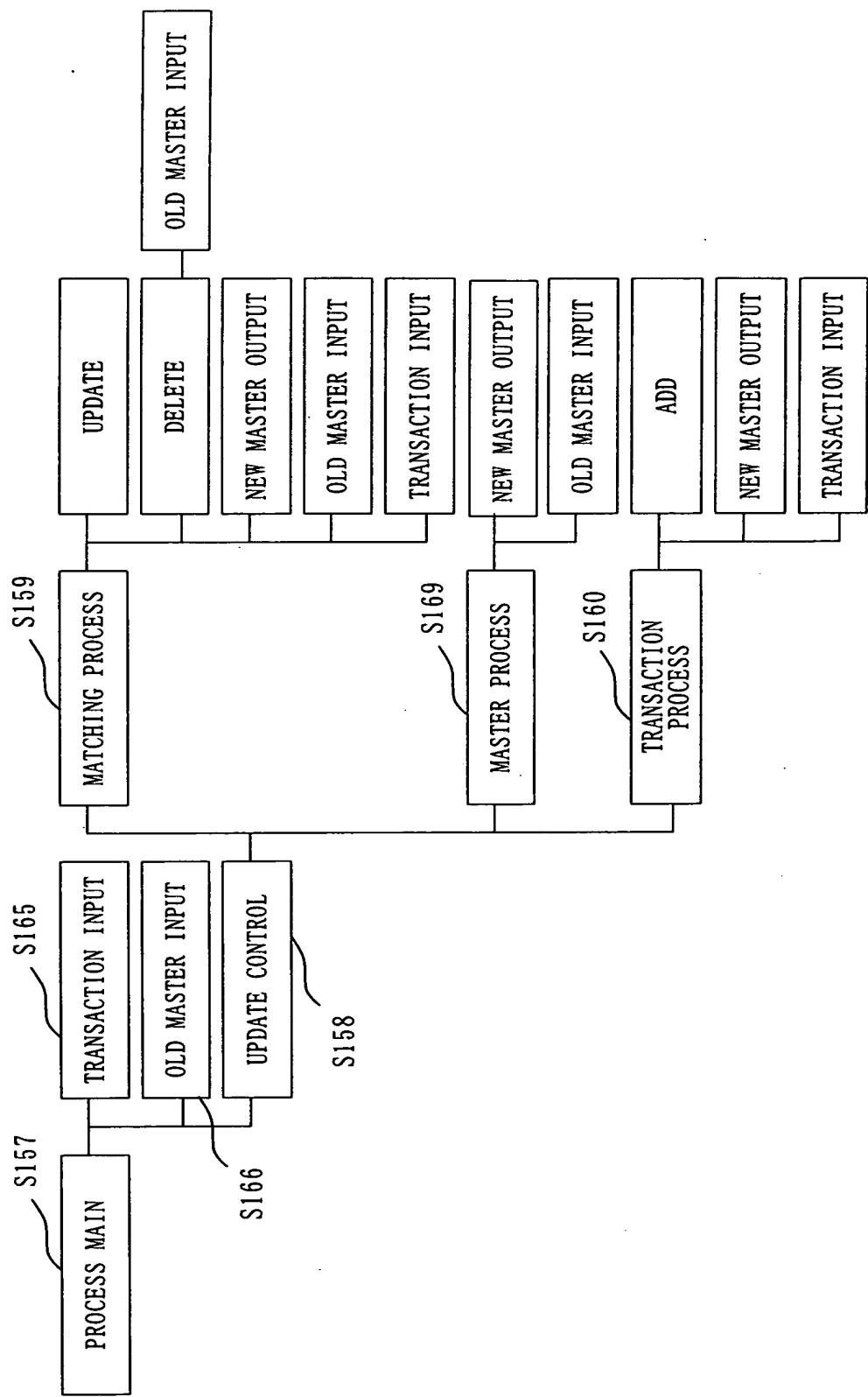


Fig. 11



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Fig.12

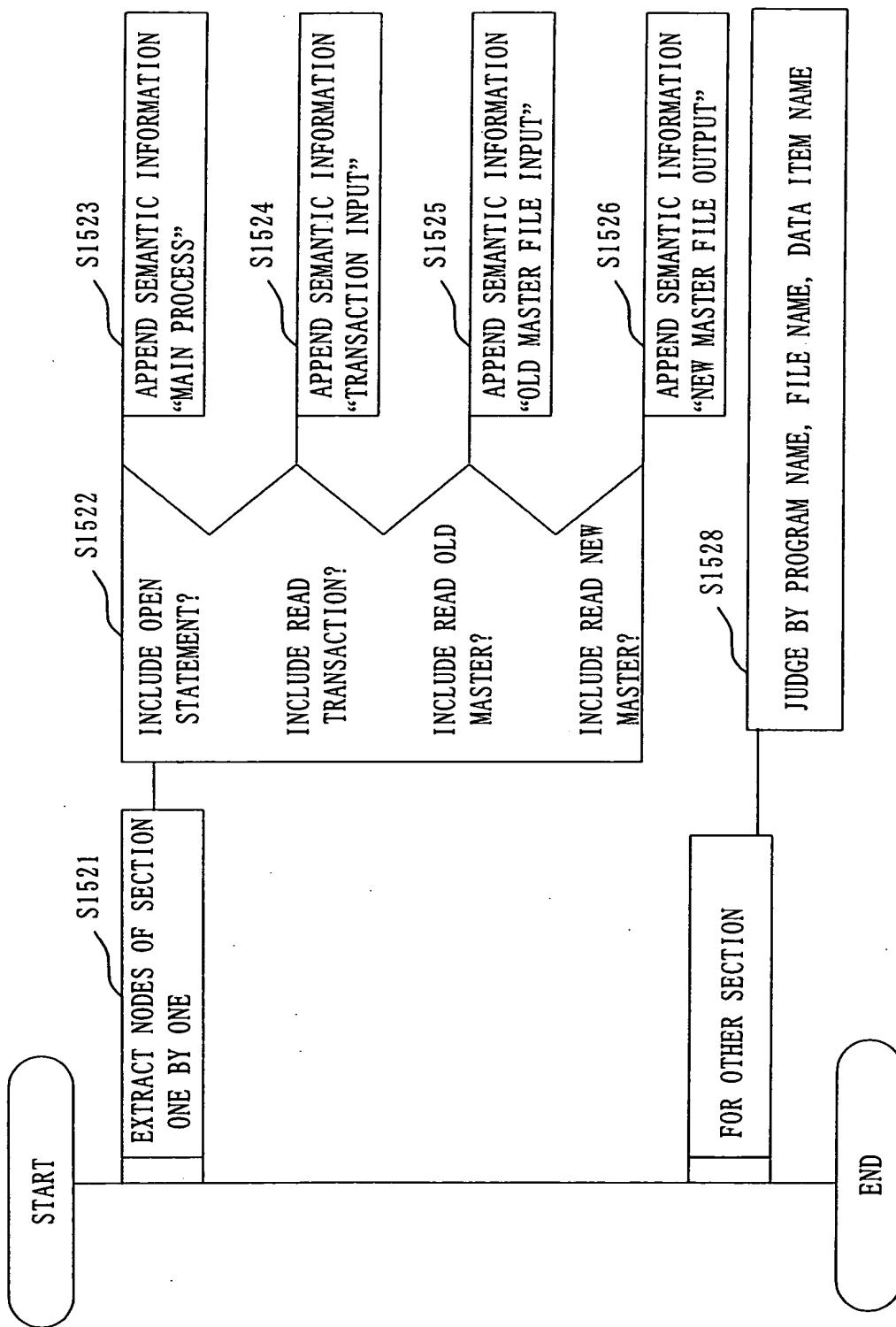


Fig.13

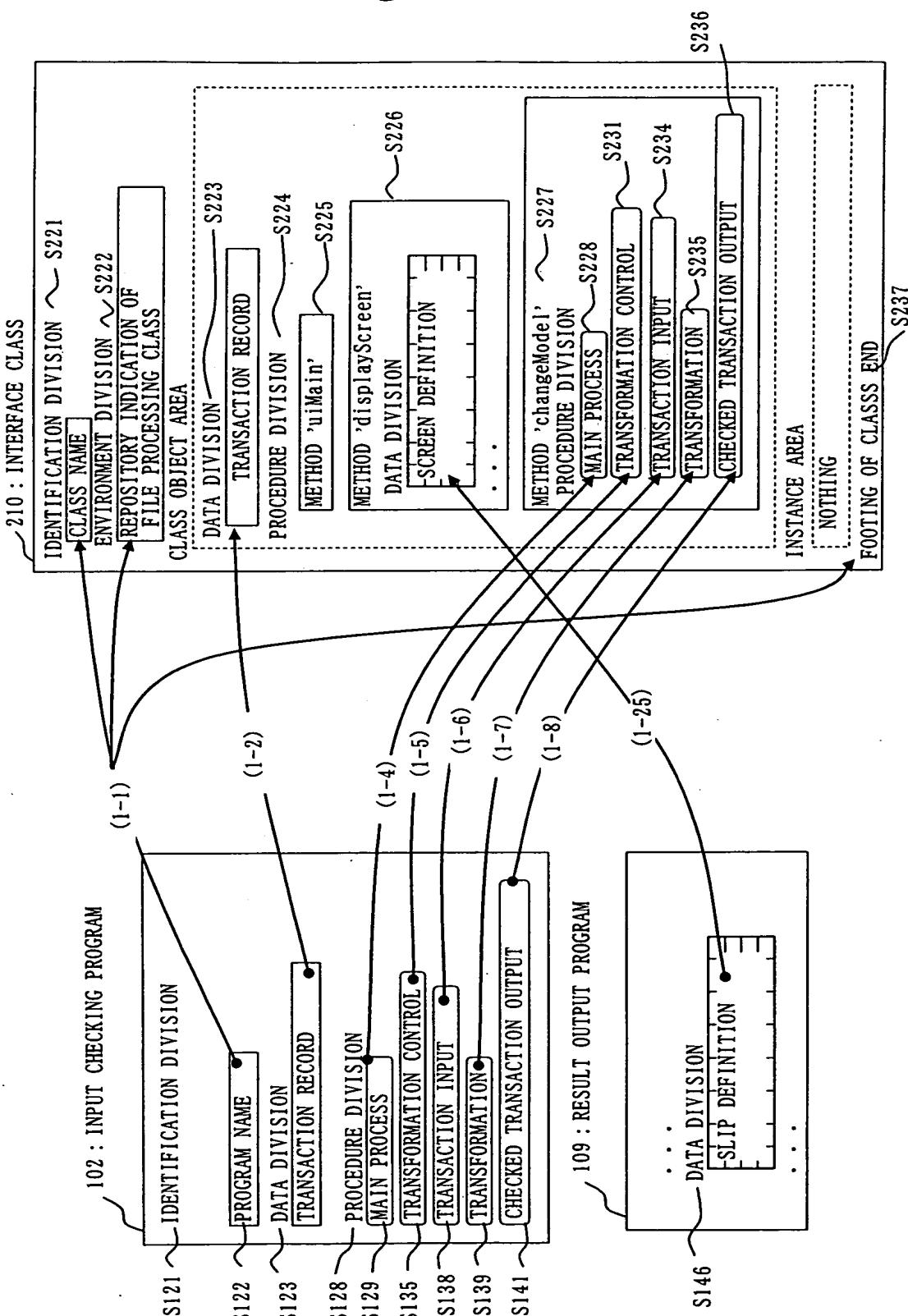
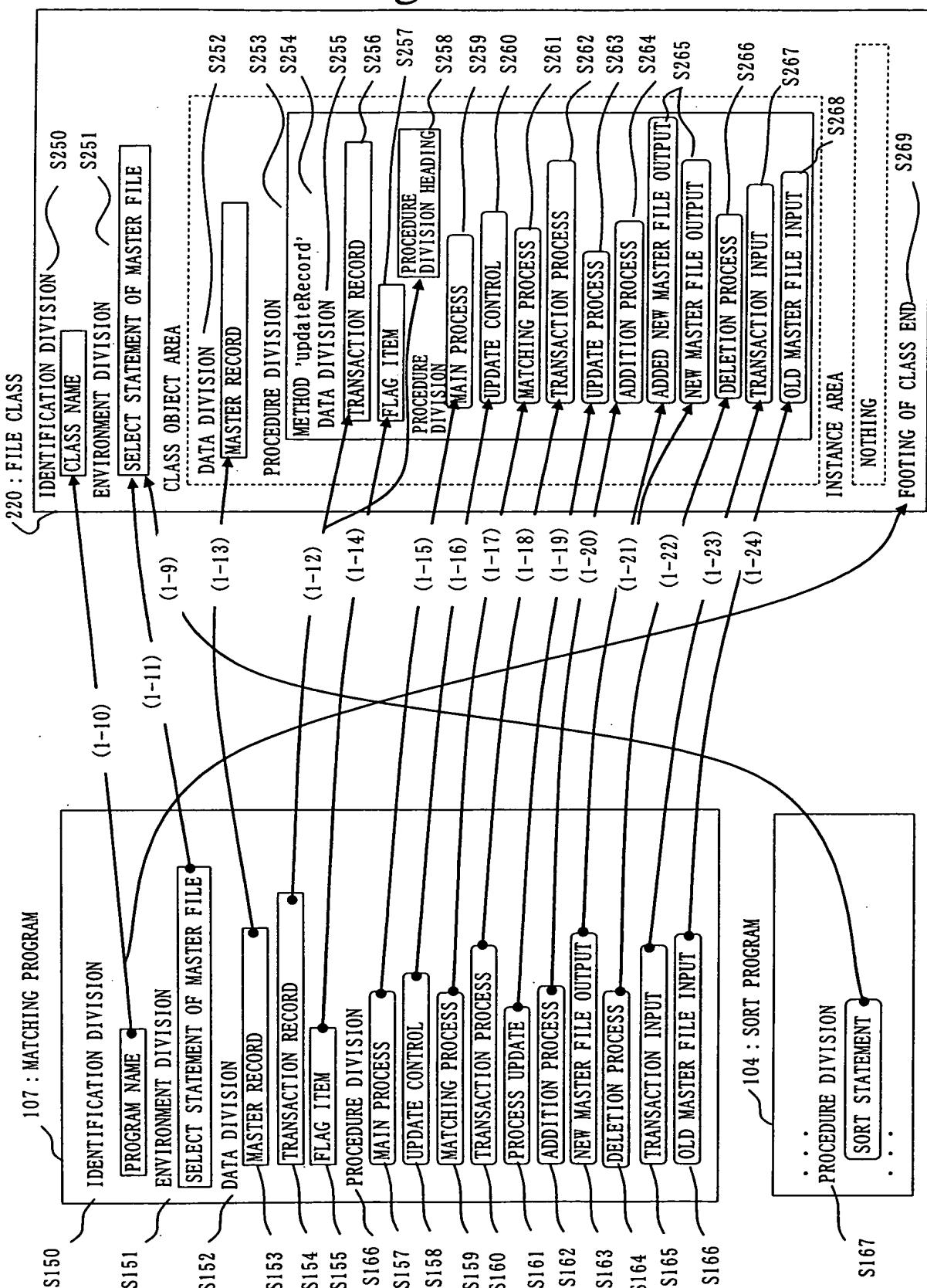


Fig. 14



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Fig. 15

LOCATION NUMBER	COMPONENT TO BE EXTRACTED	LOCATION AFTER TRANSFORMATION	HOW TO FIND FOR EXTRACTION	STRUCTURAL, SYNTAX TRANSFORMATION	REASON FOR THIS EXTRACTION/TRANSFORMATION
ORIGIN OF EXTRACTION: IDENTIFICATION DIVISION					
(1-1)	PROGRAM NAME	CLASS NAME	EXTRACT FROM PARAGRAPH OF PROGRAM-ID	• CHANGE AFFIX OF INPUT CHECKING PROGRAM TO AFFIX OF UI CLASS • APPEND AFFIX OF FILE CLASS	
ENVIRONMENT DIVISION INTERNAL NAME FOR REPOSITORY INDICATION FOR FILE CLASS					
	FOOTING OF CLASS END	"		• FOR EXTERNAL NAME, INSERT FILE NAME OF FILE CLASS ACCORDING TO NAMING RULE THE SAME AS CLASS NAME	
ORIGIN OF EXTRACTION: DATA DIVISION					
(1-2)	DEFINITION OF TRANSACTION RECORD	CLASS VARIABLE → WS SECTION	FIND AFFIX OF TRANSACTION FILE APPENDED		SEND INPUT FROM SCREEN TO FILE CLASS IN A RECORD FORMAT
ORIGIN OF EXTRACTION: PROCEDURE DIVISION → DESTINATION: UI CLASS, CLASS METHOD. INPUT CHECKING METHOD					
(1-4)	MAIN PROCESS	PROCEDURE DIVISION OF INPUT CHECKING METHOD	KNOWN BY PREPROCESSING	a. DELETE "OPEN," "CLOSE" STATEMENTS OF FILE b. DELETE REPEATING INDICATION ("UNTIL") FROM "PERFORM" STATEMENT FOR TRANSFORMATION CONTROL c. REPLACE "STOP RUN" WITH "EXIT" METHOD	a. IN UI CLASS, INPUT IS DONE FROM SCREEN, CHECKED RECORD IS OUTPUT TO FILE CLASS b. PROCESSES ONLY ONE RECORD
(1-5)	TRANSFORMATION CONTROL	"	"	DELETE "PERFORM" STATEMENT FOR TRANSACTION INPUT	DOES NOT INPUT NEXT TRANSACTION RECORD SINCE ONLY ONE RECORD IS PROCESSED
(1-6)	TRANSACTION INPUT	"	"	REPLACE "READ" STATEMENT FROM TRANSACTION FILE WITH "CONTINUE" STATEMENT	INPUT DATA FROM SCREEN IS DIRECTLY ENTERED IN TRANSACTION RECORD
(1-7)	TRANSFORMATION	"	"	DELETE "MOVE" STATEMENT FROM TRANSACTION RECORD TO CHECKED TRANSACTION RECORD	CHECK TRANSACTION RECORD, AND SEND IT TO FILE CLASS IF DATA IS CORRECT
(1-8)	CHECKED TRANSACTION OUTPUT	"	"	DELETE "WRITE" STATEMENT TO CHECKED TRANSACTION FILE, REPLACE BY "INVOKE" STATEMENT TO MATCHING AND UPDATING METHOD IN FILE CLASS	CHECKED RECORD BECOMES PARAMETER FOR MATCHING AND UPDATING METHOD

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Fig. 16

LOCATION NUMBER	COMPONENT TO BE EXTRACTED	LOCATION AFTER TRANSFORMATION	HOW TO FIND FOR EXTRACTION	STRUCTURAL, SYNTAX TRANSFORMATION	REASON FOR THIS EXTRACTION/TRANSFORMATION
(1-25)	SLIP DEFINITION	SCREEN DISPLAYING METHOD SCREEN DEFINITION	EXTRACT SLIP ITEM OF "TYPE DETAIL" IN REPORT SECTION	a. CORRESPOND LINE LOCATION, DIGIT LOCATION OF SLIP TO LINE LOCATION, DIGIT LOCATION OF SCREEN b. REPLACE "SOURCE" INDICATION OF SLIP ITEM BY "TO" INDICATION OF SCREEN ITEM c. GENERATE SCREEN ITEM BASED ON DATA ITEM THAT IS INCLUDED IN TRANSACTION RECORD BUT NOT INCLUDED IN MASTER RECORD	c. RESULT OUTPUT PROGRAM OUTPUTS ITEMS OF MASTER RECORD, TRANSACTION ITEMS ARE INPUT FROM SCREEN

Fig. 17

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Fig.18

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210 : INTERFACE CLASS

S221 IDENTIFICATION DIVISION.
      CLASS-ID. INVENTORY-MASTER-CORRECTION-UI. INHERITS CBL-BASE. ← (1-1)

ENVIRONMENT DIVISION.
  CLASS CBL-BASE.
  CLASS INVENTORY-MASTER-CORRECTION-FILE IS 'ZMFL'. ← (1-1)

*CLASS VARIABLE*
DATA DIVISION.
  01 T1-INVENTORY-MASTER-CORRECTION-RECORD. ← (1-2)
    05 T1-PROCESSING-CATEGORY PIC X(1).
    05 T1-PRODUCT-CODE PIC X(6).
    05 T1-PRODUCT-NAME PIC X(3).
    05 T1-CURRENT-INVENTORY PIC 9(7).
    05 T1-ALLOCATED-STOCK PIC 9(7).

PROCEDURE DIVISION.
*CLASS METHOD*
  .....

S224 METHOD-ID. 'displayScreen'.
DATA DIVISION.
*SCREEN DISPLAY METHOD*
  01 INVENTORY-MASTER-CORRECTION-SCREEN ← (1-25)
    05 LINE 3 COLUMN 10 VALUE 'PROCESSING CATEGORY :'.
    05 LINE 3 COLUMN 24 PIC X(1) TO T1-PROCESSING-CATEGORY.
    05 LINE 4 COLUMN 10 VALUE 'PRODUCT CODE :'.
    05 LINE 4 COLUMN 24 PIC X(6) TO T1-PRODUCT-CODE.

  .....

END METHOD. 'displayScreen'.

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Fig.19

102 : INPUT
CHECKING
PROGRAM

```

S128 PROCEDURE DIVISION.
      MAIN-PROCESS.
      OPEN INPUT T1-INVNTORY-MASTER-CORRECTION-FILE.
      OUTPUT 01-INVNTORY-MASTER-CORRECTION-FILE.
      PERFORM INVNTORY-MASTER-CORRECTION-INPUT-PROCESS.
      PERFORM TRANSFORMATION-CONTROL.
      UNTIL (END-OF-FILE-FLAG = '1').
      CLOSE T1-INVNTORY-MASTER-CORRECTION-FILE
      01-INVNTORY-MASTER-CORRECTION-FILE.
      STOP RUN.
*****S134 PERFORM TRANSFORMATION-CONTROL.
*****S135 PERFORM INVNTORY-MASTER-CORRECTION-INPUT-PROCESS.
*****S136 *TRANSACTION INPUT PROCESS*
      INVNTORY-MASTER-CORRECTION-INPUT-PROCESS.
      READ T1-INVNTORY-MASTER-CORRECTION-FILE
      AT END MOVE '1' TO END-OF-FILE-FLAG
      END-READ.
*****S138 PERFORM TRANSFORMATION.
      IF (T1-CURRENT-INVNTORY IS NUMERIC) AND
      (T1-ALLOCATED-STOCK IS NUMERIC)
      THEN
      MOVE T1 - INVNTORY-MASTER-CORRECTION-RECORD
      TO 01 - INVNTORY-MASTER-CORRECTION-RECORD
      PERFORM INVNTORY-MASTER-CORRECTION-OUTPUT-PROCESS
      END-IF.
*****S139 *TRANSACTION OUTPUT PROCESS*
      CHECKED-INVNTORY-MASTER-CORRECTION-OUTPUT-PROCESS.
      WRITE 01-INVNTORY-MASTER-CORRECTION-RECORD.
*****S140 END PROGRAM INVNTORY-MASTER-CORRECTION - INPUT-CHECKING.
*****S141
*****S142
*****S143

```

(1-4) → (1-5) → (1-6) → (1-7) → (1-8) →

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Fig. 20

```

(Continued from PROCEDURE DIVISION)
METHOD-ID. 'changeModel'.
***** PROCEDURE DIVISION. ***** ↑ ← (1-4)
MAIN-PROCESS.
S230  PERFORM INVENTORY-MASTER-CORRECTION-INPUT-PROCESS.   ↑ ← (1-5)
      PERFORM TRANSFORMATION-CONTROL.
S231  EXIT METHOD.
***** ↑ ← (1-6)
TRANSFORMATION CONTROL.
PERFORM TRANSFORMATION.
***** ↑ ← (1-7)
*TRANSACTION INPUT PROCESS*
INVENTORY-MASTER-CORRECTION-INPUT-PROCESS.
CONTINUE.
***** ↑ ← (1-8)
TRANSFORMATION.
IF (T1-CURRENT-INVENTORY IS NUMERIC) AND
(T1-ALLOCATED-STOCK IS NUMERIC)
THEN
  PERFORM INVENTORY-MASTER-CORRECTION-OUTPUT-PROCESS
END-IF.
***** ↑ ← (1-9)
*TRANSACTION OUTPUT PROCESS*
CHECKED-INVENTORY-CORRECTION-OUTPUT-PROCESS.
  INVOKE INVENTORY-MASTER-FILE 'updateRecord'
    USING T1-INVENTORY-MASTER-CORRECTION-RECORD
  END-INVOKE.
END METHOD 'changeModel'.
END CLASS-OBJECT.
END CLASS INVENTORY-MASTER-CORRECTION-UI. ↑ ← (1-1)
S237

```

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Fig. 21

11. INPUT CHECKIN1. INPUT CHECKING PROGRAM (BEFORE TRANSFORMATION)

FILE NAME : ZMIN.CBL

000001 IDENTIFICATION DIVISION.

000002 PROGRAM-ID. INVENTORY-MASTER-CORRECTION- INPUT-CHECKING. [(1-1) →

000003 ENVIRONMENT DIVISION.

000004 INPUT-OUTPUT SECTION.

000005 FILE-CONTROL.

000006 SELECT T1-VENTORY-MASTER-CORRECTION-FILE ASSIGN TO SYS010-UT-MT-S.

000008 SELECT 01-VENTORY-MASTER-CORRECTION-FILE ASSIGN TO SYS020-DA-DK-S.

000010 DATA DIVISION.

000011 FILE SECTION.

000012 FD T1-VENTORY-MASTER-CORRECTION-FILE.

000013 01 T1-VENTORY-MASTER-CORRECTION-RECORD.

000014 05 T1-PROCESSING-CATEGORY PIC X(1).

000015 05 T1-PRODUCT-CODE PIC X(6).

000016 05 T1-PRODUCT-NAME PIC X(30).

000017 05 T1-CURRENT-VENTORY PIC 9(7).

000018 05 T1-ALLOCATED-STOCK PIC 9(7).

000019 05 T1-POINT-OF-ORDERING PIC 9(7).

000020 05 T1-BASE-VENTORY PIC 9(7).

000021 05 T1-SUPPLYER-CODE PIC X(5).

000022 FD 01-VENTORY-MASTER-CORRECTION-FILE.

000023 01 01-VENTORY-MASTER-CORRECTION-RECORD.

000024 05 01-PROCESSING-CATEGORY PIC X(1).

000025 05 01-PRODUCT-CODE PIC X(6).

000026 05 01-PRODUCT-NAME PIC X(30).

000027 05 01-CURRENT-VENTORY PIC 9(7).

000028 05 01-ALLOCATED-STOCK PIC 9(7).

000029 05 01-POINT-OF-ORDERING PIC 9(7).

000030 05 01-BASE-VENTORY PIC 9(7).

000031 05 01-SUPPLYER-CODE PIC X(5).

000036 PROCEDURE DIVISION.

000037 MAIN PROCESS.

000038 OPEN INPUT T1-VENTORY-MASTER-CORRECTION-FILE

000039 OUTPUT 01-VENTORY-MASTER-CORRECTION-FILE.

000040 PERFORM INVENTORY-MASTER-CORRECTION-INPUT.

000041 PERFORM TRANSFORMATION-CONTROL

000042 UNTIL(FILE-END-FLAG = '1').

000043 CLOSE T1-VENTORY-MASTER-CORRECTION-FILE

000044 01-VENTORY-MASTER-CORRECTION-FILE.

000045 STOP RUN.

000046*****

000047 TRANSFORMATION-CONTROL.

000048 PERFORM TRANSFORMATION.

000049 PERFORM INVENTORY-MASTER-CORRECTION-INPUT. [(1-5) →

000050*****

000051 INVENTORY-MASTER-CORRECTION-INPUT.

000052 READ T1-VENTORY-MASTER-CORRECTION-FILE

000053 AT END MOVE '1' TO FILE-END-FLAG [(1-6) →

000054 END-READ.

000055*****

000056 TRANSFORMATION.

000057 IF (T1-CURRENT-VENTORY IS NUMERIC) AND

000058 (T1-ALLOCATED-STOCK IS NUMERIC)

000059 THEN [(1-7) →

000060 MOVE T1-VENTORY-MASTER-CORRECTION-RECORD

000061 TO 01-VENTORY-MASTER-CORRECTION-RECORD

000062 PERFORM CHECKEDINVENTORY-MASTER-CORRECTION-OUTPUT

000063 END-IF.

000064*****

000065 CHECKEDINVENTORY-MASTER-CORRECTION OUTPUT. [(1-8) →

000066 WRITE 01-VENTORY-MASTER-CORRECTION-RECORD.

000067 END PROGRAM INVENTORY-MASTER-CORRECTION- INPUT-CHECKING.

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Fig. 22

5. INTERFACE CLASS (INTERMEDIATE PROGRAM)

FILE NAME : ZMUI.CBL

000001 IDENTIFICATION DIVISION.

000002 CLASS-ID. INVENTORY-MASTER-CORRECTION-UI INHERITS CBL-BASE. [← (1-1) (2-1) →]

000003 ENVIRONMENT DIVISION.

000004 CONFIGURATION SECTION.

000005 REPOSITORY.

000006 CLASS CBL-BASE.

000007 CLASS INVENTORY-MASTER-CORRECTION-FILE IS 'ZMFL'. [← (1-1)]

000008 IDENTIFICATION DIVISION.

000009 CLASS-OBJECT.

000010 DATA DIVISION.

000011*****

000012* CLASS VARIABLE

000013*****

000014 WORKING-STORAGE SECTION.

000015 01 T1-INVENTORY-MASTER-CORRECTION-RECORD.

000016 05 T1-PROCESSING-CATEGORY PIC X(1).

000017 05 T1-PRODUCT-CODE PIC X(6).

000018 05 T1-PRODUCT-NAME PIC X(30).

000019 05 T1-CURRENT-INVENTORY PIC 9(7).

000020 05 T1-ALLOCATED-STOCK PIC 9(7).

000021 05 T1-POINT-OF-ORDERING PIC 9(7).

000022 05 T1-BASE-INVENTORY PIC 9(7).

000023 05 T1-SUPPLYER-CODE PIC X(5).

000024 01 END-FLAG PIC X(1).

000025 PROCEDURE DIVISION.

000026*****

000027* CLASS METHOD

000028*****

000029 IDENTIFICATION DIVISION.

000030 METHOD-ID. 'displayScreen'.

000031*****

000032 DATA DIVISION.

000033 SCREEN SECTION.

000034 01 INVENTORY-MASTER-DETAIL.

000035 05 LINE 3 COLUMN 10 VALUE 'PROCESSING CATEGORY' : _ (1-25)

000036 05 LINE 3 COLUMN 24 PIC X(1) TO T1-PROCESSING-CATEGORY

000037 05 LINE 4 COLUMN 10 VALUE 'PRODUCT CODE' : _

000038 05 LINE 4 COLUMN 24 PIC X(6) TO T1-PRODUCT-CODE.

000039 05 LINE 5 COLUMN 10 VALUE 'PRODUCT NAME' : _

000040 05 LINE 5 COLUMN 24 PIC X(30) TO T1-PRODUCT-NAME.

000041 05 LINE 6 COLUMN 10 VALUE 'CURRENT INVENTORY' : _

000042 05 LINE 6 COLUMN 24 PIC 9(7) TO T1-CURRENT-INVENTORY.

000043 05 LINE 7 COLUMN 10 VALUE 'ALLOCATED STOCK' : _

000044 05 LINE 7 COLUMN 24 PIC 9(7) TO T1-ALLOCATED-STOCK.

000045 05 LINE 8 COLUMN 10 VALUE 'POINT OF ORDERING' : _

000046 05 LINE 8 COLUMN 24 PIC 9(7) TO T1-POINT-OF-ORDERING.

000047 05 LINE 9 COLUMN 10 VALUE 'BASE INVENTORY' : _

000048 05 LINE 9 COLUMN 24 PIC 9(7) TO T1-BASE-INVENTORY.

000049 05 LINE 10 COLUMN 10 VALUE 'SUPPLYER CODE' : _

000050 05 LINE 10 COLUMN 24 PIC X(5) TO T1-SUPPLYER-CODE.

000051 05 LINE 11 COLUMN 40 VALUE 'END' : _

000052 05 LINE 11 COLUMN 24 PIC X(1) TO END-FLAG.

000053 PROCEDURE DIVISION.

000054 DISPLAY INVENTORY-MASTER-DETAIL.

000055 ACCEPT INVENTORY-MASTER-DETAIL.

000056 EXIT METHOD.

000057 END METHOD. 'displayScreen'.

000058

:

] (2-3) →

] ← (1-2)

] (2-2) →

] ← (1-25)

Fig. 23

(5. INTERFACE CLASS —CONTINUED)

```

000059*****  

000060 IDENTIFICATION DIVISION.  

000061 METHOD-ID. 'uiMain'.  

000062*****  

000063 PROCEDURE DIVISION.  

000064     PERFORM UNTIL (END FLAG = '1')  

000065        (INVOKE SELF 'displayScreen'  

000066            (INVOKE SELF 'changeModel'  

000067         END-PERFORM.  

000068     EXIT METHOD.  

000069 END METHOD 'uiMain'.  

000070  

000071*****  

000072 IDENTIFICATION DIVISION.  

000073 METHOD-ID. 'changeModel'.  

000074*****  

000075 PROCEDURE DIVISION.  

000076 MAIN-PROCESS.  

000077     PERFORM INVENTORY-MASTER-CORRECTION-INPUT.  

000078     PERFORM TRANSFORMATION-CONTROL  

000079     EXIT METHOD.  

000080*****  

000081 TRANSFORMATION-CONTROL.  

000082     PERFORM TRANSFORMATION.  

000083*****  

000084 INVENTORY-MASTER-CORRECTION-INPUT.  

000085     CONTINUE.  

000086*****  

000087 TRANSFORMATION.  

000088     IF (T1-CURRENT-INVENTORY IS NUMERIC) AND  

000089         (T1-ALLOCATED-STOCK IS NUMERIC)  

000090     THEN  

000091         PERFORM CHECKED-INVENTORY-MASTER-CORRECTION-OUTPUT  

000092     END-IF.  

000093*****  

000094 CHECKEDINVENTORY-MASTER-CORRECTION-OUTPUT.  

000095    (INVOKE INVENTORY-MASTER-FILE 'updateRecord'  

000096         USING T1-INVENTORY-MASTER-CORRECTION-RECORD  

000097     END-INVOKE.  

000098 END METHOD 'changeModel'.  

000099 END CLASS-OBJECT.  

000100 END CLASS INVENTORY-MASTER-CORRECTION-UI.

```

(2-4) →

[← (1-4)

(2-5) →

[← (1-5)

(2-6) →

[← (1-6)

(2-7) →

[← (1-7)

(2-8) →

[← (1-8)

(2-9) →

[← (1-1)

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Fig. 24

4. RESULT OUTPUT PROGRAM

FILE NAME : ZMOT.CBL

000001 IDENTIFICATION DIVISION.

000002 PROGRAM-ID. INVENTORY-MASTER-CORRECTION-RESULT-OUTPUT.

000003 ENVIRONMENT DIVISION.

000004 INPUT-OUTPUT SECTION.

000005 FILE-CONTROL.

000006 SELECT T1-VENTORY-MASTER-FILE

000007 ASSIGN TO SYS010-DA-DK-S.

000008 SELECT 01-OUTPUT-FILE

000009 ASSIGN TO SYS020-UR-LP-S.

000010 DATA DIVISION.

000011 FILE SECTION.

000012 FD T1-VENTORY-MASTER-FILE BLOCK CONTAINS 35 RECORDS.

000013 01 T1-VENTORY-MASTER-RECORD.

000014 05 T1-PRODUCT-CODE PIC X(6).

000015 05 T1-PRODUCT-NAME PIC X(30).

000016 05 T1-CURRENT-VENTORY PIC 9(7).

000017 05 T1-ALLOCATED-STOCK PIC 9(7).

000018 05 T1-POINT-OF-ORDERING PIC 9(7).

000019 05 T1-BASE-VENTORY PIC 9(7).

000020 05 T1-SUPPLYER-CODE PIC X(5).

000021 FD 01-OUTPUT-FILE LABEL RECORD OMITTED

000022 REPORT IS INVENTORY-MASTER-LIST.

000023 WORKING-STORAGE SECTION.

000024 01 FILE-END-FLAG PIC X VALUE '0'.

000025 01 W-DATE PIC X(8).

000026 REPORT SECTION.

000027 RD INVENTORY-MASTER-LIST CONTROLS ARE T1-PRODUCT-CODE

000028 PAGE LIMITS 66 LINES

000029 HEADING 1

000030 FIRST DETAIL 7

000031 LAST DETAIL 56

000032 FOOTING 66.

000033 01 INVENTORY-MASTER-DETAIL TYPE IS DETAIL.

000034 05 LINE NUMBER IS 4.

000035 10 COLUMN 10 PIC X(12) VALUE 'PRODUCT CODE: '.

000036 10 COLUMN 22 PIC X(6) SOURCE T1-PRODUCT-CODE.

000037 05 LINE NUMBER IS 5.

000038 10 COLUMN 10 PIC X(8) VALUE 'PRODUCT NAME: '.

000039 10 COLUMN 18 PIC X(30) SOURCE T1-PRODUCT-NAME.

000040 05 LINE NUMBER IS 6.

000041 10 COLUMN 10 PIC X(10) VALUE 'CURRENT INVENTORY: '.

000042 10 COLUMN 20 PIC 9(7) SOURCE T1-CURRENT-VENTORY.

000043 05 LINE NUMBER IS 7.

000044 10 COLUMN 10 PIC X(8) VALUE 'ALLOCATED STOCK: '.

000045 10 COLUMN 18 PIC 9(7) SOURCE T1-ALLOCATED-STOCK.

000046 05 LINE NUMBER IS 8.

000047 10 COLUMN 10 PIC X(8) VALUE 'POINT OF ORDERING: '.

000048 10 COLUMN 18 PIC 9(7) SOURCE T1-POINT-OF-ORDERING.

000049 05 LINE NUMBER IS 9.

000050 10 COLUMN 10 PIC X(12) VALUE 'BASE INVENTORY: '.

000051 10 COLUMN 22 PIC 9(7) SOURCE T1-BASE-VENTORY.

000052 05 LINE NUMBER IS 10.

000053 10 COLUMN 10 PIC X(14) VALUE 'SUPPLYER CODE: '.

000054 10 COLUMN 24 PIC X(5) SOURCE T1-SUPPLYER-CODE.

000055 01 TYPE IS PAGE HEADING.

000056 05 LINE NUMBER IS 2.

000057 10 COLUMN 41 PIC X(18) VALUE '*** INVENTORY MASTER'.

000058 10 COLUMN 60 PIC X(16) VALUE 'SLIP ***'.

000059 10 COLUMN 95 PIC X(8) SOURCE W-DATE.

000060 01 TYPE IS CONTROL FOOTING T1-PRODUCT-CODE

000061 NEXT GROUP NEXT PAGE.

(1-25) →

(4. RESULT OUTPUTTING PROGRAM —CONTINUED)

000062 PROCEDURE DIVISION.

000063 MAIN PROCESS.

000064 OPEN INPUT T1-INVENTORY-MASTER-FILE
000065 OUTPUT 01-OUTPUT-FILE.

000066 MOVE CURRENT-DATE TO W-DATE.

000067 INITIATE INVENTORY-MASTER-LIST.

000068 PERFORM INVENTORY-MASTER-FILE-INPUT.

000069 PERFORM REPORTING-CONTROL

000070 UNTIL (FILE-END-FLAG = '1').

000071 TERMINATE INVENTORY-MASTER-LIST.

000072 CLOSE T1-INVENTORY-MASTER-FILE

000073 01-OUTPUT-FILE.

000074 STOP RUN.

000075*****

000076 REPORTING CONTROL.

000077 GENERATE INVENTORY-MASTER-DETAIL.

000078 PERFORM INVENTORY-MASTER-FILE-INPUT.

000079*****

000080 INVENTORY-MASTER-FILE-INPUT.

000081 READ T1-INVENTORY-MASTER-FILE

000082 AT END MOVE '1' TO FILE-END-FLAG

000083 END-READ.

000084 END PROGRAM INVENTORY-MASTER-CORRECTION-RESULT-OUTPUT.

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Fig.26

LOCATION NUMBER	COMPONENT TO BE EXTRACTED	LOCATION AFTER TRANSFORMATION	HOW TO FIND FOR EXTRACTION	STRUCTURAL, SYNTAX TRANSFORMATION	REASON FOR THIS EXTRACTION/TRANSFORMATION
ORIGIN OF EXTRACTION: IDENTIFICATION DIVISION					
(1-10)	PROGRAM NAME	CLASS NAME	EXTRACT FROM PARAGRAPH OF PROGRAM-ID		
		FOOTING OF CLASS END	"		
ORIGIN OF EXTRACTION: ENVIRONMENT DIVISION					
(1-11)	"SELECT" STATEMENT OF OLD MASTER FILE	ENVIRONMENT DIVISION	JUDGE NAME OF OLD MASTER FILE BASED ON NAMING RULE OF FILE, EXTRACT "SELECT" STATEMENT	a. CHANGE "ORGANIZATION" INDICATION TO "INDEXED" ("ORGANIZATION INDEXED") b. APPEND "ACCESS RANDOM" INDICATION c. APPEND "RECORD KEY" INDICATION	
ORIGIN OF EXTRACTION: DATA DIVISION					
(1-13)	OLD MASTER RECORD DEFINITION	CLASS VARIABLE → FILE SECTION	JUDGE NAME OF OLD MASTER FILE BASED ON NAMING RULE		
(1-12)	TRANSACTION RECORD DEFINITION	MATCHING AND UPDATING METHOD → LINKAGE SECTION OF DATA DIVISION	JUDGE NAME OF TRANSACTION FILE BASED ON NAMING RULE		CHANGE FROM "READ" FROM FILE TO PARAMETER TO METHOD
		MATCHING AND UPDATING METHOD → WS SECTION OF DATA DIVISION	"	INSERT ONLY RECORD NAME	USE TRANSACTION RECORD AS PARAMETER
(1-14)	FLAG ITEM	MATCHING AND UPDATING METHOD → WS SECTION OF DATA DIVISION	EXTRACT DATA OF WS SECTION WITHOUT CHANGE		FLAG ITEM BECOMES NECESSARY, SINCE LOGIC OF MATCHING AND UPDATING PROGRAM (INPUT TRANSACTION RECORD AND MASTER RECORD, COMPARISON OF KEYS) IS USED WITHOUT CHANGE

Fig. 27

ORIGIN OF EXTRACTION: DATA DIVISION → AFTER TRANSFORMATION: MATCHING AND UPDATING METHOD, PROCEDURE DIVISION

(1-15)	MAIN PROCESS	PROCEDURE DIVISION OF MATCHING AND UPDATING METHOD	KNOWN BY PREPROCESSING	a. DELETE INDICATION OF TRANSACTION, NEW MASTER FILE FROM "OPEN" AND "CLOSE" STATEMENTS. CHANGE "OPEN" MODE OF OLD MASTER FILE TO "I-O" MODE. b. DELETE REPETITION INDICATION ("UNTIL") FROM "PERFORM" STATEMENT FOR UPDATE CONTROL PROCESS. c. CHANGE "STOP RUN" STATEMENT TO "EXIT METHOD" STATEMENT.	a. INPUT TRANSACTION AS A PARAMETER "READ" AND "WRITE" ARE DONE FROM/TO SAME MASTER FILE. b. PROCESS ONLY ONE RECORD
(1-16)	UPDATE CONTROL	"	"	DELETE "PERFORM" STATEMENT WHICH CALLS MASTER PROCESS IF TRANSACTION KEY DOES NOT MATCH MASTER KEY.	MASTER PROCESS (TO PREPARE NEXT MASTER RECORD) BECOMES INNECESSARY, SINCE ONLY ONE MASTER RECORD IS PROCESSED.
(1-17)	MATCHING	"	"	DELETE "PERFORM" STATEMENT FOR TRANSACTION INPUT.	DOES NOT CALL PROCESS FOR PREPARING NEXT TRANSACTION, SINCE ONLY ONE TRANSACTION RECORD IS PROCESSED.
(1-18)	TRANSACTION PROCESS	"	"	REPLACE "PERFORM" STATEMENT FOR NEW MASTER OUTPUT BY "PERFORM" STATEMENT FOR ADDITIONAL NEW MASTER OUTPUT PROCESS.	IN BATCH PROCESSING (SEQUENTIAL FILE), UPDATE AND ADDITION ARE PERFORMED BY "WRITE". ON-LINE REAL-TIME PROCESSING (INDEXED FILE), "WRITE" FOR ADDITION OR "REWRITE" FOR UPDATE ARE USED.
(1-19, UPDATE), (1-20, ADDITION)	ARE EXTRACTED AND INSERTED WITHOUT CHANGE				
(1-21)	NEW MASTER OUTPUT	"	"	CHANGE "WRITE" STATEMENT TO "REWRITE".	THE SAME AS (22)
(1-22)	DELETION	"	"	CHANGE NAME OF SECTION TO ADDITIONAL NEW MASTER OUTPUT PROCESS DELETE "PERFORM" STATEMENT FOR OLD MASTER INPUT AND REPLACE BY "DELETE" STATEMENT OF MASTER RECORD	BATCH PROCESSING: INPUT OLD MASTER RECORD → IF DELETE, DON'T OUTPUT TO NEW MASTER (PASS) AND INPUT NEXT MASTER RECORD
(1-23)	TRANSACTION INPUT	"	"		ON-LINE REAL-TIME PROCESSING: INPUT MASTER RECORD → IF DELETE, THE RECORD IS DELETED BY "DELETE" STATEMENT.
(1-24, OLD MASTER INPUT)	IS EXTRACTED AND INSERTED WITHOUT CHANGE				a. TRANSACTION IS INPUT AS A PARAMETER OF METHOD b. EXTRACT ONLY "MOVE" STATEMENT THAT MOVES FROM KEY OF TRANSACTION RECORD AND INSERT IT INTO LOCATION AFTER TRANSFORMATION OF FILE ARE UNNECESSARY

Fig.28

LOCATION NUMBER	COMPONENT TO BE EXTRACTED	LOCATION AFTER TRANSFORMATION	HOW TO FIND FOR EXTRACTION	STRUCTURAL, SYNTAX TRANSFORMATION	REASON FOR THIS EXTRACTION/ TRANSFORMATION
(1-9)	PROCEDURE DIVISION DATA ITEM NAME IN "ASCENDING" INDICATION OF "SORT" STATEMENT	ENVIRONMENT DIVISION "SELECT" STATEMENT OF OLD MASTER FILE, RECORD KEY INDICATION	SIMPLE SEARCH	CHANGE AFFIX OF TRANSACTION RECORD TO AFFIX OF OLD MASTER RECORD	

Fig. 29

3. MATCHING AND UPDATING PROGRAM (BEFORE TRANSFORMATION)

PROGRAM NAME : ZMUP.CBL

000001 IDENTIFICATION DIVISION.

000002 PROGRAM-ID. INVENTORY-MASTER-CORRECTION-MATCHING-AND-UPDATING.] (1-10) →

000003 ENVIRONMENT DIVISION.

000004 INPUT-OUTPUT SECTION.

000005 FILE-CONTROL.

000006 SELECT T1-VENTORY-MASTER-CORRECTION-FILE

000007 ASSIGN TO SYS010-DA-DK-S

000008 ORGANIZATION LINE SEQUENTIAL.

000009 SELECT M1-VENTORY-MASTER-FILE] (1-11) →

000010 ASSIGN TO SYS030-DA-DK-S

000011 ORGANIZATION LINE SEQUENTIAL.]

000012 SELECT M2-VENTORY-MASTER-FILE

000013 ASSIGN TO SYS031-DA-DK-S

000014 ORGANIZATION LINE SEQUENTIAL.

000015 DATA DIVISION.

000016 FILE SECTION.

000017 FD T1-VENTORY-MASTER-CORRECTION-FILE.

000018 01 T1-VENTORY-MASTER-CORRECTION-RECORD.

000019 05 T1-PROCESSING-CATEGORY PIC X(1).

000020 88 T1-ADD VALUE '1'.

000021 88 T1-UPDATE VALUE '2'.

000022 88 T1-DELETE VALUE '9'.

000023 05 T1-PRODUCT-CODE PIC X(6).

000024 05 T1-PRODUCT-NAME PIC X(30).

000025 05 T1-CURRENT-VENTORY PIC 9(7).

000026 05 T1-ALLOCATED-STOCK PIC 9(7).

000027 05 T1-POINT-OF-ORDERING PIC 9(7).

000028 05 T1-BASE-VENTORY PIC 9(7).

000029 05 T1-SUPPLYER-CODE PIC X(5).

000030 FD M1-VENTORY-MASTER-FILE.

000031 01 M1-VENTORY-MASTER-RECORD.

000032 05 M1-PRODUCT-CODE PIC X(6).

000033 05 M1-PRODUCT-NAME PIC X(30).

000034 05 M1-CURRENT-VENTORY PIC 9(7).

000035 05 M1-ALLOCATED-STOCK PIC 9(7).

000036 05 M1-POINT-OF-ORDERING PIC 9(7).

000037 05 M1-BASE-VENTORY PIC 9(7).

000038 05 M1-SUPPLYER-CODE PIC X(5).

000039 FD M2-VENTORY-MASTER-FILE.

000040 01 M2-VENTORY-MASTER-RECORD.

000041 05 M2-PRODUCT-CODE PIC X(6).

000042 05 M2-PRODUCT-NAME PIC X(30).

000043 05 M2-CURRENT-VENTORY PIC 9(7).

000044 05 M2-ALLOCATED-STOCK PIC 9(7).

000045 05 M2-POINT-OF-ORDERING PIC 9(7).

000046 05 M2-BASE-VENTORY PIC 9(7).

000047 05 M2-SUPPLYER-CODE PIC X(5).

] (1-10) →

] (1-11) →

] (1-12) →

] (1-13) →

:

Fig. 30

(3. MATCHING AND UPDATING PROGRAM —CONTINUED (1))

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000048
000049 WORKING-STORAGE SECTION.
000050 01 WORKING AREA.
000051    05 W-TRANSACTION-KEY PIC X(6) VALUE LOW-VALUE.
000052    05 W-MASTER-KEY PIC X(6).
000053 01 FLAG.
000054    05 FILE-END-FLAG 1 PIC X VALUE '0'.
000055    05 FILE-END-FLAG 2 PIC X VALUE '0'.
000056    05 PROCESS-END-FLAG PIC X VALUE '0'.
000057
000058 PROCEDURE DIVISION.
000059 MAIN PROCESS.
000060    OPEN INPUT T1-INVENTORY-MASTER-CORRECTION-FILE
000061          M1-INVENTORY-MASTER-FILE
000062          OUTPUT M2-INVENTORY-MASTER-FILE.
000063    PERFORM INVENTORY-MASTER-CORRECTION-INPUT.
000064    PERFORM OLD-INVENTORY-MASTER-INPUT.
000065    PERFORM UPDATE-CONTROL
000066          UNTIL (PROCESS-END-FLAG = '1').
000067    CLOSE T1-INVENTORY-MASTER-CORRECTION-FILE
000068          M1-INVENTORY-MASTER-FILE
000069          M2-INVENTORY-MASTER-FILE.
000070    STOP RUN.
000071*****+
000072 UPDATE-CONTROL.
000073    IF (W-TRANSACTION-KEY = W-MASTER-KEY)
000074        THEN
000075            PERFORM MATCHING-PROCESS
000076        ELSE
000077            IF (W-TRANSACTION-KEY > W-MASTER-KEY)
000078                THEN
000079                    PERFORM MASTER-PROCESS
000080                ELSE
000081                    PERFORM TRANSACTION-PROCESS
000082            END-IF
000083        END-IF.
000084*****+
000085 MATCHING-PROCESS.
000086    IF (W-TRANSACTION-KEY = HIGH-VALUE)
000087        THEN
000088            MOVE '1' TO PROCESS-END-FLAG
000089        ELSE
000090            EVALUATE T1-PROCESSING-CATEGORY
000091                WHEN T1-UPDATE
000092                    PERFORM UPDATE-PROCESS
000093                    PERFORM NEW-INVENTORY-MASTER-OUTPUT
000094                    PERFORM OLD-INVENTORY-MASTER-INPUT
000095                WHEN T1-DELETE
000096                    PERFORM DELETE-PROCESS
000097            END-EVALUATE
000098            PERFORM INVENTORY-MASTER-CORRECTION-INPUT-CHECKING
000099        END-IF.
000100*****+

```

:

(1-14) →

(1-15) →

(1-16) →

(1-17) →

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Fig. 31

(3. MATCHING AND UPDATING PROGRAM --CONTINUED (2))

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000101 MASTER-PROCESS.
000102     MOVE M1-INVENTORY-MASTER-RECORD
000103         TO M2-INVENTORY-MASTER-RECORD.
000104     PERFORM NEW-INVENTORY-MASTER-OUTPUT.
000105     PERFORM OLD-INVENTORY-MASTER-INPUT.
000106***** (1-18) →
000107 TRANSACTION-PROCESS.
000108     IF T1-ADD
000109     THEN
000110         PERFORM ADD-PROCESS
000111         PERFORM NEW-INVENTORY-MASTER-OUTPUT.
000112     END-IF.
000113     PERFORM INVENTORY-MASTER-CORRECTION-INPUT.
000114***** (1-19) →
000115 UPDATE-PROCESS.
000116     MOVE T1-PRODUCT-NAME      TO M2-PRODUCT-NAME.
000117     MOVE T1-CURRENT-INVENTORY TO M2-CURRENT-INVENTORY.
000118     MOVE T1-ALLOCATED-STOCK  TO M2-ALLOCATED-STOCK.
000119     MOVE T1-POINT-OF-ORDERING TO M2-POINT-OF-ORDERING.
000120     MOVE T1-BASE-INVENTORY   TO M2-BASE-INVENTORY.
000121     MOVE T1-SUPPLIER-CODE   TO M2-SUPPLIER-CODE.
000122***** (1-20) →
000123 ADD-PROCESS.
000124     MOVE T1-PRODUCT-CODE      TO M2-PRODUCT-CODE.
000125     MOVE T1-PRODUCT-NAME      TO M2-PRODUCT-NAME.
000126     MOVE T1-CURRENT-INVENTORY TO M2-CURRENT-INVENTORY.
000127     MOVE T1-ALLOCATED-STOCK  TO M2-ALLOCATED-STOCK.
000128     MOVE T1-POINT-OF-ORDERING TO M2-POINT-OF-ORDERING.
000129     MOVE T1-BASE-INVENTORY   TO M2-BASE-INVENTORY.
000130     MOVE T1-SUPPLIER-CODE   TO M2-SUPPLIER-CODE.
000131***** (1-21) →
000132 NEW-INVENTORY-MASTER-OUTPUT.
000133     WRITE M2-INVENTORY-MASTER-RECORD
000134     INVALID MOVE '1' TO PROCESS-END-FLAG.
000135***** (1-22) →
000136 DELETE-PROCESS.
000137     PERFORM OLD-INVENTORY-MASTER-INPUT.
000138***** (1-23) →
000139 INVENTORY-MASTER-CORRECTION-INPUT.
000140     READ T1-INVENTORY-MASTER-CORRECTION-FILE
000141         AT END MOVE '1' TO FILE-END-FLAG 1
000142     END-READ.
000143     IF (FILE-END-FLAG 1 = '1')
000144     THEN
000145         MOVE HIGH-VALUE TO W-TRANSACTION-KEY
000146     ELSE
000147         MOVE T1-PRODUCT-CODE
000148             TO W-TRANSACTION-KEY
000149     END-IF.
000150***** (1-24) →
000151 OLD-INVENTORY-MASTER-INPUT.
000152     READ M1-INVENTORY-MASTER-FILE
000153         AT END MOVE '1' TO FILE-END-FLAG 2
000154     END-READ.
000155     IF (FILE-END-FLAG 2 = '1')
000156     THEN
000157         MOVE HIGH-VALUE TO W-MASTER-KEY
000158     ELSE
000159         MOVE M1-PRODUCT-CODE TO W-MASTER-KEY
000160     END-IF.
000161 END PROGRAM INVENTORY-MASTER-CORRECTION-MATCHING-AND-UPDATING.

```

Fig. 32

2. SORT PROGRAM (BEFORE TRANSFORMATION)

FILE NAME : ZMSR.CBL

000001 IDENTIFICATION DIVISION.

000002 PROGRAM-ID. INVENTORY-MASTER-CORRECTION-SORT.

000003 ENVIRONMENT DIVISION.

000004 INPUT-OUTPUT SECTION.

000005 FILE-CONTROL.

000006 SELECT T1-VENTORY-MASTER-CORRECTION-FILE

000007 ASSIGN TO SYS010-UT-MT-S.

000008 SELECT 01-VENTORY-MASTER-CORRECTION-FILE

000009 ASSIGN TO SYS020-DA-DK-S.

000010 SELECT S1-INTERMEDIATE-FILE

000011 ASSIGN TO WORK001.

000012 DATA DIVISION.

000013 FILE SECTION.

000014 FD T1-VENTORY-MASTER-CORRECTION-FILE.

000015 01 PIC X(70)

000016 FD 01-VENTORY-MASTER-CORRECTION-FILE.

000017 01 PIC X(70).

000018 SD S1-INTERMEDIATE-FILE.

000019 01 S1-INTERMEDIATE-FILE-RECORD.

000020 05 S1-PROCESSING-CATEGORY PIC X(1).

000021 05 S1-PRODUCT-CODE PIC X(6).

000022 05 S1-PRODUCT-NAME PIC X(30).

000023 05 S1-CURRENT-VENTORY PIC 9(7).

000024 05 S1-ALLOCATED-STOCK PIC 9(7).

000025 05 S1-POINT-OF-ORDERING PIC 9(7).

000026 05 S1-BASE-VENTORY PIC 9(7).

000027 05 S1-SUPPLIER-CODE PIC X(5).

000028 PROCEDURE DIVISION.

000029 SORT INTERMEDIATE-FILE

000030 ON ASCENDING KEY S1-PRODUCT-CODE

000031 USING T1-VENTORY-MASTER-CORRECTION-FILE

000032 GIVING 01-VENTORY-MASTER-CORRECTION-FILE.

000033 STOP RUN.

000034 END PROGRAM INVENTORY-MASTER-CORRECTION-SORT.

] (1-9) →

6. FILE CLASS (INTERMEDIATE PROGRAM)

FILE NAME : ZMFL.CBL

000001 IDENTIFICATION DIVISION.

000002 CLASS-ID. INVENTORY-MASTER-CORRECTION-FILE INHERITS CBL-BASE.]
000003 ENVIRONMENT DIVISION.]
000004 CONFIGURATION SECTION.]
000005 REPOSITORY.]
000006 CLASS CBL-BASE.]
000007 INPUT-OUTPUT SECTION.]
000008 FILE-CONTROL.]000009 SELECT M1-INVENTORY-MASTER-FILE]
000010 ASSIGN TO SYS030-DA-DK-1]
000011 ORGANIZATION INDEXED]
000012 ACCESS RANDOM]
000013 RECORD KEY M1-PRODUCT-CODE.]
000014]
000015 IDENTIFICATION DIVISION.]
000016 CLASS-OBJECT.]
000017 DATA DIVISION.]
000018*****
000019* CLASS VARIABLE
000020*****
000021 FILE SECTION.]
000022 FD M1-INVENTORY-MASTER-FILE.]
000023 01 M1-INVENTORY-MASTER-RECORD.]
000024 05 M1-PRODUCT-CODE PIC X(6).]
000025 05 M1-PRODUCT-NAME PIC X(30).]
000026 05 M1-CURRENT-INVENTORY PIC S9(7).]
000027 05 M1-ALLOCATED-STOCK PIC S9(7).]
000028 05 M1-POINT-OF-ORDERING PIC S9(7).]
000029 05 M1-BASE-INVENTORY PIC S9(7).]
000030 05 M1-SUPPLIER-CODE PIC X(5).]
000031]
000032 PROCEDURE DIVISION.]
000033*****
000034* CLASS METHOD
000035*****
000036 IDENTIFICATION DIVISION.]
000037 METHOD-ID. 'updateRecord'.]
000038*****
000039 DATA DIVISION.]
000040 LINKAGE SECTION.]
000041 01 T1-INVENTORY-MASTER-CORRECTION-RECORD.]
000042 05 T1-PROCESSING-CATEGORY PIC X(1).]
000043 88 T1-ADD VALUE '1'.]
000044 88 T1-UPDATE VALUE '2'.]
000045 88 T1-DELETE VALUE '9'.]
000046 05 T1-PRODUCT-CODE PIC X(6).]
000047 05 T1-PRODUCT-NAME PIC X(30).]
000048 05 T1-CURRENT-INVENTORY PIC 9(7).]
000049 05 T1-ALLOCATED-STOCK PIC 9(7).]
000050 05 T1-POINT-OF-ORDERING PIC 9(7).]
000051 05 T1-BASE-INVENTORY PIC 9(7).]
000052 05 T1-SUPPLIER-CODE PIC X(5).]
000053]
000054 WORKING-STORAGE SECTION.]
000055 01 WORKING AREA.]
000056 05 W-TRANSACTION-KEY PIC X(6) VALUE LOW-VALUE.]
000057 05 W-MASTER-KEY PIC X(6).]
000058 01 FLAG.]
000059 05 FILE-END-FLAG1 PIC X VALUE '0'.]
000060 05 FILE-END-FLAG2 PIC X VALUE '0'.]
000061 05 PROCESS-END-FLAG PIC X VALUE '0'.]
000062]
000063 PROCEDURE DIVISION USING T1-INVENTORY-MASTER-CORRECTION-RECORD.]
000064 MAIN PROCESS.]
000065 OPEN I-O M1-INVENTORY-MASTER-FILE.]
000066 PERFORM INVENTORY-MASTER-CORRECTION-INPUT.]
000067 PERFORM OLD-INVENTORY-MASTER-INPUT.]
000068 PERFORM UPDATE-CONTROL.]
000069 CLOSE M1-INVENTORY-MASTER-FILE.]
000070 EXIT METHOD.]
:] (1-10)
] (2-10) →] (1-11)
] (1-9)
] (2-11) →] (1-13)
] (2-12) →

] (2-14) →

] (1-12)
] (2-13) →

] (1-14)

] (1-12)

] (1-15)

Fig. 34

(6. FILE CLASS --CONTINUED)

```

000071***** (1-16) (2-14
000072 UPDATE-CONTROL. -CONTINUED) -->
000073     IF (W-TRANSACTION-KEY = W-MASTER-KEY)
000074         THEN
000075             PERFORM MATCHING
000076         ELSE
000077             PERFORM TRANSACTION
000078     END-IF.
000079***** (1-17)
000080 MATCHING.
000081     IF (W-TRANSACTION-KEY = HIGH-VALUE)
000082         THEN
000083             MOVE '1' TO PROCESS-END-FLAG
000084         ELSE
000085             EVALUATE TI-PROCESSING-CATEGORY
000086                 WHEN TI-UPDATE
000087                     PERFORM UPDATE-PROCESS
000088                     PERFORM NEW-INVENTORY-MASTER-OUTPUT
000089                 WHEN TI-DELETE
000090                     PERFORM DELETE-PROCESS
000091             END-EVALUATE
000092     END-IF.
000093***** (1-18)
000094 TRANSACTION.
000095     IF TI-ADD
000096         THEN
000097             PERFORM ADD-PROCESS
000098             PERFORM ADDNEW-INVENTORY-MASTER-OUTPUT.
000099     END-IF.
000100***** (1-19)

000101 UPDATE-PROCESS.
000102     MOVE TI-PRODUCT-NAME      TO MI-PRODUCT-NAME.
000103     MOVE TI-CURRENT-INVENTORY  TO MI-CURRENT-INVENTORY.
000104     MOVE TI-ALLOCATED-STOCK    TO MI-ALLOCATED-STOCK.
000105     MOVE TI-POINT-OF-ORDERING  TO MI-POINT-OF-ORDERING.
000106     MOVE TI-BASE-INVENTORY     TO MI-BASE-INVENTORY.
000107     MOVE TI-SUPPLIER-CODE     TO MI-SUPPLIER-CODE.
000108***** (1-20)
000109 ADD-PROCESS.
000110     MOVE TI-PRODUCT-CODE      TO MI-PRODUCT-CODE.
000111     MOVE TI-PRODUCT-NAME     TO MI-PRODUCT-NAME.
000112     MOVE TI-CURRENT-INVENTORY  TO MI-CURRENT-INVENTORY.
000113     MOVE TI-ALLOCATED-STOCK    TO MI-ALLOCATED-STOCK.
000114     MOVE TI-POINT-OF-ORDERING  TO MI-POINT-OF-ORDERING.
000115     MOVE TI-BASE-INVENTORY     TO MI-BASE-INVENTORY.
000116     MOVE TI-SUPPLIER-CODE     TO MI-SUPPLIER-CODE.
000117***** (1-21)
000118 ADD-NEW-INVENTORY-MASTER-OUTPUT.
000119     WRITE MI-INVENTORY-MASTER-RECORD
000120         INVALID MOVE '1' TO PROCESS-END-FLAG.
000121***** (1-21)
000122 NEW-INVENTORY-MASTER-OUTPUT.
000123     REWRITE MI-INVENTORY-MASTER-RECORD
000124         INVALID MOVE '1' TO PROCESS-END-FLAG.
000125***** (1-22)
000126 DELETE-PROCESS.
000127     DELETE MI-INVENTORY-MASTER-RECORD
000128         INVALID MOVE '1' TO PROCESS-END-FLAG.
000129***** (1-23)
000130 INVENTORY-MASTER-CORRECTION-INPUT.
000131     MOVE TI-PRODUCT-CODE
000132         TO W-TRANSACTION-KEY MI-PRODUCT-CODE
000133***** (1-24)
000134 OLD-INVENTORY-MASTER-INPUT.
000135     READ MI-INVENTORY-MASTER-FILE
000136         INVALID MOVE '1' TO FILE-END-FLAG 2.
000137     IF (FILE-END-FLAG 2 = '1')
000138         THEN
000139             MOVE HIGH-VALUE TO W-MASTER-KEY
000140         ELSE
000141             MOVE MI-PRODUCT-CODE TO W-MASTER-KEY
000142     END-IF.
000143 END METHOD 'updateRecord'.
000144 END CLASS-OBJECT.
000145 END CLASS INVENTORY-MASTER-CORRECTION-FILE. (1-10)

```

Fig.35

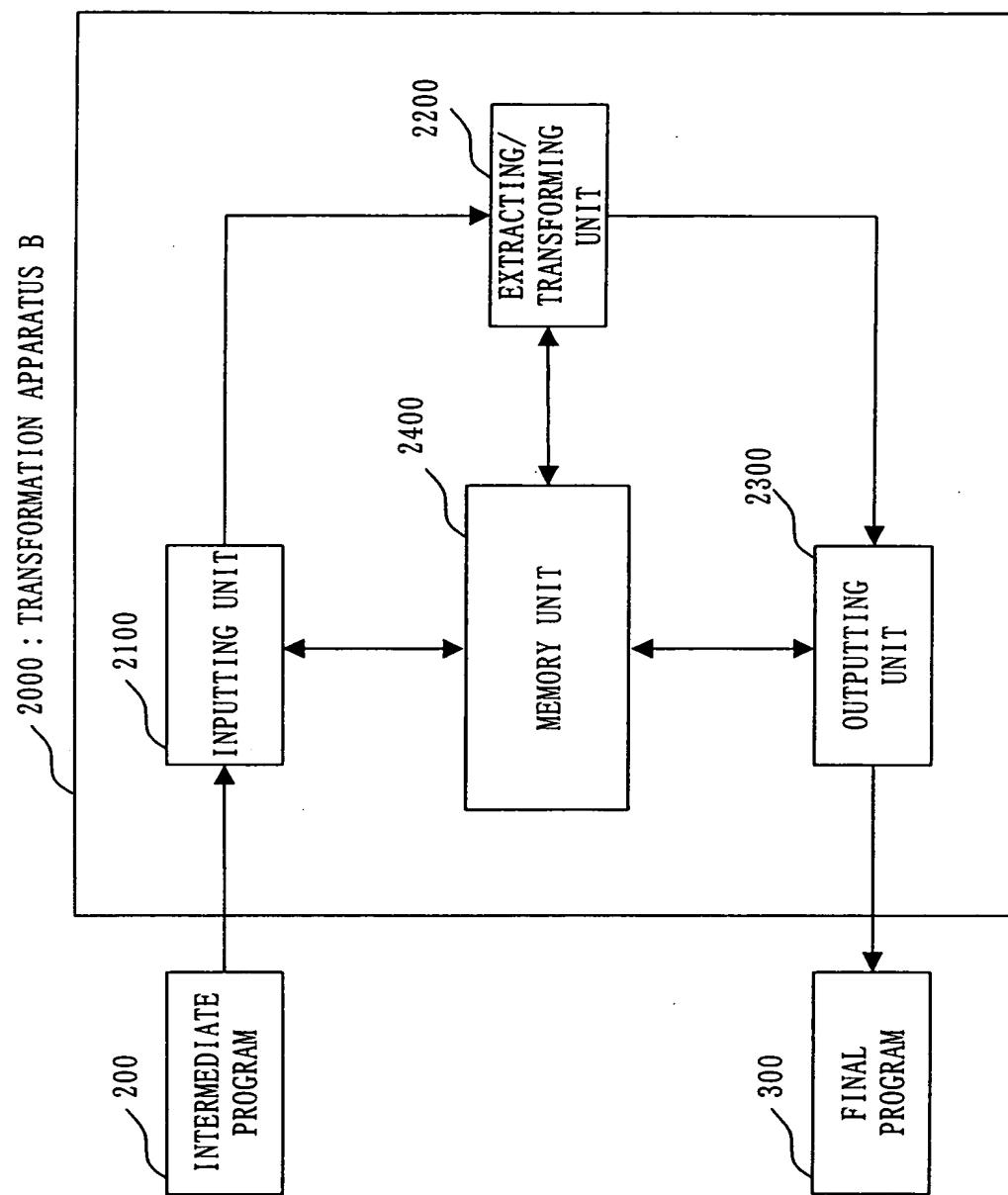
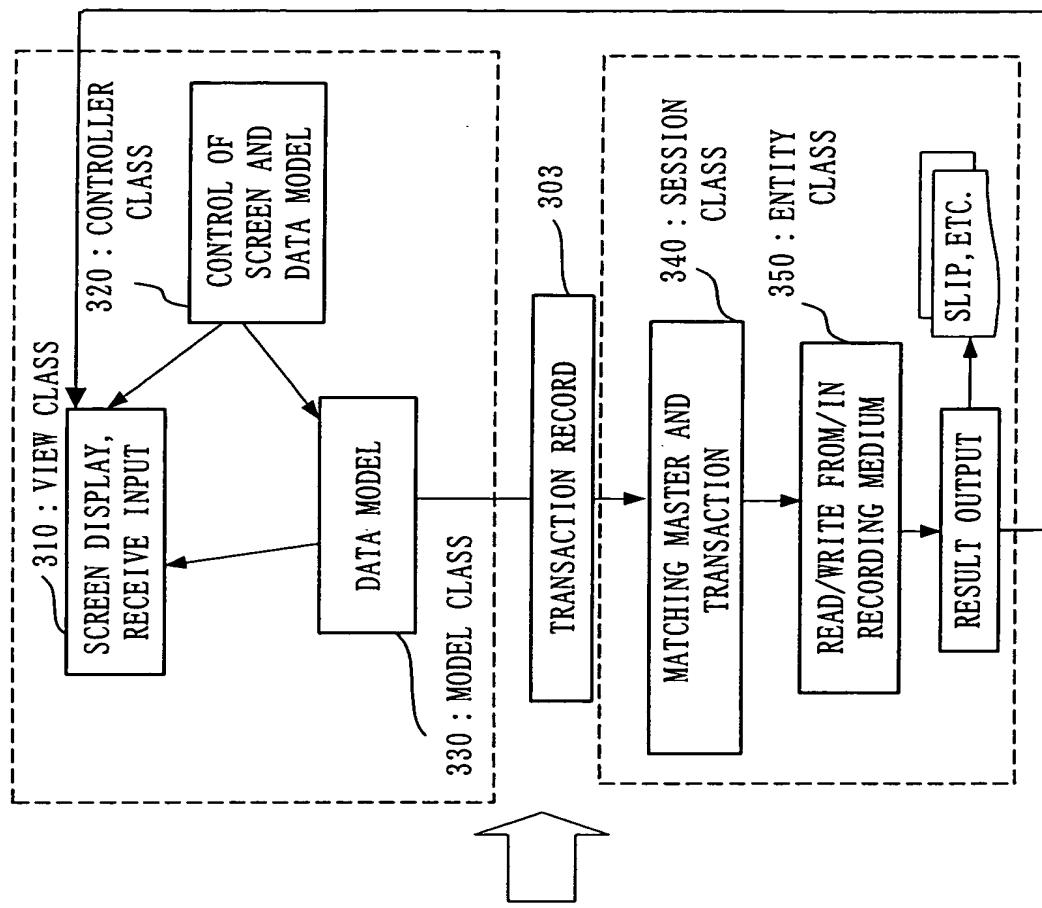


Fig.36

MORE OBJECT-ORIENTED ON-LINE REAL-TIME PROCESSING
BY FINAL PROGRAM 300



ON-LINE PROCESSING BY INTERMEDIATE PROGRAM 200

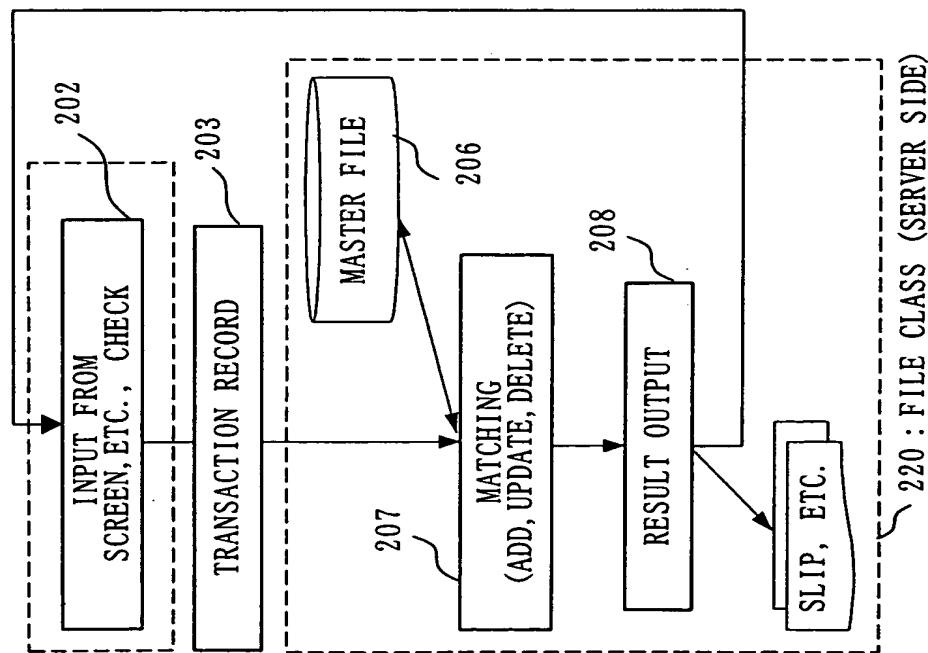


Fig.37

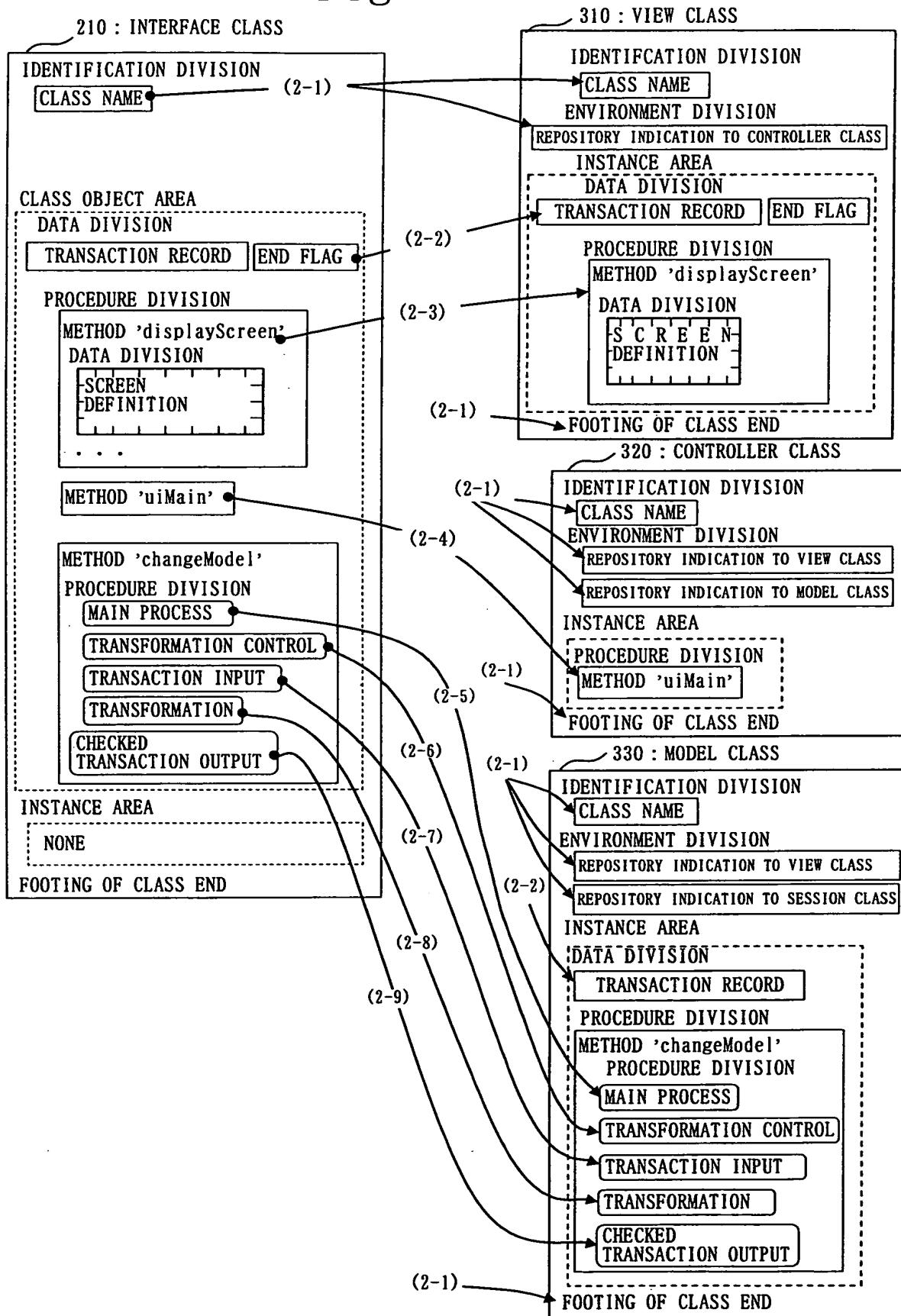


Fig.38

NUMBER	COMPONENT TO BE EXTRACTED	LOCATION AFTER TRANSFORMATION	STRUCTURAL, SYNTAX TRANSFORMATION	REASON FOR THIS EXTRACTION/TRANSFORMATION
ORIGIN OF EXTRACTION: UI, CLASS IDENTIFICATION DIVISION				
(2-1)	CLASS NAME	CLASS NAME	APPEND AFFIX OF VIEW CLASS	
	ENVIRONMENT DIVISION INTERNAL NAME FOR REPOSITORY INDICATION FOR CONTROLLER CLASS	APPEND AFFIX OF CONTROLLER CLASS NAME • FOR EXTERNAL NAME, INSERT FILE NAME OF CONTROLLER CLASS ACCORDING TO NAMING RULE	APPEND AFFIX OF VIEW CLASS	
ORIGIN OF EXTRACTION: UI, CLASS VARIABLE				
(2-2)	TRANSACTION RECORD AND END FLAG	INSTANCE VARIABLE → WS SECTION	APPEND "PROPERTY" INDICATION TO DATA ITEM	INPUT FROM SCREEN IS STORED IN A FORMAT OF RECORD APPEND "PROPERTY" INDICATION FOR LATER REFERENCE FROM MODEL CLASS
ORIGIN OF EXTRACTION: UI, CLASS METHOD				
(2-3)	SCREEN DISPLAYING METHOD	INSTANCE METHOD		

Fig.39

NUMBER	COMPONENT TO BE EXTRACTED	LOCATION AFTER TRANSFORMATION	STRUCTURAL, SYNTAX TRANSFORMATION	REASON FOR THIS EXTRACTION/TRANSFORMATION
ORIGIN OF EXTRACTION: UI, CLASS IDENTIFICATION DIVISION				
(2-1)	CLASS NAME	CLASS NAME	APPEND AFFIX OF CONTROLLER CLASS	
	ENVIRONMENT DIVISION	• APPEND AFFIX OF VIEW CLASS		
	INTERNAL NAME FOR REPOSITORY	• FOR EXTERNAL NAME, INSERT FILE NAME OF		
	INDICATION FOR VIEW CLASS	VIEW CLASS ACCORDING TO NAMING RULE		
	INTERNAL NAME FOR REPOSITORY	• APPEND AFFIX OF MODEL CLASS		
	INDICATION FOR MODEL CLASS	• FOR EXTERNAL NAME, INSERT FILE NAME OF		
		MODEL CLASS ACCORDING TO NAMING RULE		
	FOOTING OF CLASS END	APPEND AFFIX OF CONTROLLER CLASS		
ORIGIN OF EXTRACTION: UI, CLASS VARIABLE				
(2-4)	UI MAIN METHOD → PROCEDURE DIVISION	INSTANCE METHOD → MAIN METHOD → PROCEDURE DIVISION	a. "Invoke" STATEMENT TO SCREEN DISPLAYING METHOD CLASS INDICATION TO BE CALLED: CHANGE TO NAME OF REFERENCE ITEM TO VIEW CLASS b. "Invoke" STATEMENT TO CHECKING METHOD CLASS INDICATION TO BE CALLED: CHANGE TO NAME OF REFERENCE ITEM TO MODEL CLASS	CHANGE CALLING, SINCE SCREEN DISPLAYING METHOD IS ASSIGNED TO VIEW CLASS AND CHECKING METHOD IS ASSIGNED TO INSTANCE OF MODEL CLASS

Fig.40

NUMBER	COMPONENT TO BE EXTRACTED	LOCATION AFTER TRANSFORMATION	STRUCTURAL, SYNTAX TRANSFORMATION	REASON FOR THIS EXTRACTION/TRANSFORMATION
ORIGIN OF EXTRACTION: UI, CLASS IDENTIFICATION DIVISION				
(2.1)	CLASS NAME	CLASS NAME	APPEND AFFIX MODEL CLASS	
	ENVIRONMENT DIVISION		APPEND AFFIX OF VIEW CLASS	
	INTERNAL NAME FOR		FOR EXTERNAL NAME, INSERT	
	REPOSITORY INDICATION FOR		FILE NAME OF VIEW CLASS	
	VIEW CLASS		ACCORDING TO NAMING RULE	
	INTERNAL NAME FOR		APPEND AFFIX OF SESSION CLASS	
	REPOSITORY INDICATION FOR		FOR EXTERNAL NAME, INSERT	
	SESSION CLASS		FILE NAME OF SESSION CLASS	
	FOOTING OF CLASS END		ACCORDING TO NAMING RULE	
			APPEND AFFIX OF MODEL CLASS	
ORIGIN OF EXTRACTION: UI, CLASS VARIABLE				
(2.2)	TRANSACTION RECORD	INSTANCE VARIABLE		
ORIGIN OF EXTRACTION: UI, CLASS METHOD, MATCHING AND UPDATING METHOD → AFTER TRANSFORMATION: MODEL, INSTANCE METHOD, MATCHING AND UPDATING METHOD				
(2.5, MAIN PROCESS). (2.6, TRANSFORMATION CONTROL). (2.8, TRANSFORMATION) ARE EXTRACTED AND INSERTED WITHOUT CHANGE				
(2.7)	TRANSACTION INPUT		"INVOKE" STATEMENT TO VIEW DATA OBTAINING METHOD IN VIEW CLASS	MODEL CLASS RECEIVES INPUT DATA FROM VIEW CLASS AND CHECK DATA
(2.9)	CHECKED TRANSACTION OUTPUT		a. CREATE "INVOKE" STATEMENT TO INITIALIZATION METHOD IN SESSION CLASS, b. "INVOKE" STATEMENT TO TRANSACTION CHECKING METHOD IN SESSION CLASS,	TRANSFER CHECKED TRANSACTION TO SESSION CLASS.

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Fig. 41

7. VIEW CLASS (FINAL PROGRAM)

FILE NAME : ZMVI.CBL

```

000001 IDENTIFICATION DIVISION.
000002 CLASS-ID. INVENTORY-MASTER-CORRECTION-view INHERITS CBL-BASE. ]← (2-1)
000003 ENVIRONMENT DIVISION.
000004 CONFIGURATION SECTION.
000005 REPOSITORY.
000006     CLASS CBL-BASE.
000007     CLASS INVENTORY-MASTER-CORRECTION-controller IS 'ZMCN'. ]← (2-1)
000008
000009 IDENTIFICATION DIVISION.
000010 CLASS-OBJECT.
000011 PROCEDURE DIVISION.
000012*****+
000013* CLASS METHOD
000014*****+
000015 IDENTIFICATION DIVISION.
000016 METHOD-ID. 'create'.
000017*****+
000018 DATA DIVISION.
000019 WORKING-STORAGE SECTION.
000020 01 W-INVENTORY-MASTER-CORRECTION-view OBJECT REFERENCE SELF.
000021 PROCEDURE DIVISION.
000022     INVOKE SELF 'CBL-NEW'
000023         RETURNING W-INVENTORY-MASTER-CORRECTION-view.
000024     INVOKE INVENTORY-MASTER-CORRECTION-controller 'create'
000025         USING W-INVENTORY-MASTER-CORRECTION-view.
000026     EXIT METHOD.
000027 END METHOD 'create'.
000028 END CLASS-OBJECT.
000029
000030 IDENTIFICATION DIVISION.
000031 OBJECT.
000032 DATA DIVISION.
000033*****+
000034* INSTANCE VARIABLE
000035*****+
000036 WORKING-STORAGE SECTION.
000037 01 T1-INVENTORY-MASTER-CORRECTION-RECORD. ]← (2-2)
000038     05 T1-PROCESSING-CATEGORY    PIC X(1) PROPERTY NO SET.
000039     05 T1-PRODUCT-CODE        PIC X(6) PROPERTY NO SET.
000040     05 T1-PRODUCT-NAME        PIC X(30) PROPERTY NO SET.
000041     05 T1-CURRENT-INVENTORY    PIC 9(7) PROPERTY NO SET.
000042     05 T1-ALLOCATED-STOCK      PIC 9(7) PROPERTY NO SET.
000043     05 T1-POINT-OF-ORDERING    PIC 9(7) PROPERTY NO SET.
000044     05 T1-BASE-INVENTORY       PIC 9(7) PROPERTY NO SET.
000045     05 T1-SUPPLYER-CODE       PIC X(5) PROPERTY NO SET.
000046 01 END FLAG PIC X(1) PROPERTY NO SET.

```

:

Fig. 42

(7. VIEW CLASS --CONTINUED)

```

000047 PROCEDURE DIVISION.
000048***** INSTANCE METHOD
000049***** IDENTIFICATION DIVISION.
000050***** METHOD-ID. 'displayScreen'.
000051***** DATA DIVISION.
000052***** SCREEN SECTION.
000053***** 01 INVENTORY MASTER DETAIL.
000054      05 LINE 3 COLUMN 10 VALUE 'PROCESSING CATEGORY' : .
000055      05 LINE 3 COLUMN 24 PIC X(1) TO T1-PROCESSING-CATEGORY.
000056      05 LINE 4 COLUMN 10 VALUE 'PRODUCT CODE' : _____.
000057      05 LINE 4 COLUMN 24 PIC X(6) TO T1-PRODUCT-CODE.
000058      05 LINE 5 COLUMN 10 VALUE 'PRODUCT NAME' : _____.
000059      05 LINE 5 COLUMN 24 PIC X(30) TO T1-PRODUCT-NAME.
000060      05 LINE 6 COLUMN 10 VALUE 'CURRENT INVENTORY' : _____.
000061      05 LINE 6 COLUMN 24 PIC 9(7) TO T1-CURRENT-INVENTORY.
000062      05 LINE 7 COLUMN 10 VALUE 'ALLOCATED STOCK' : _____.
000063      05 LINE 7 COLUMN 24 PIC 9(7) TO T1-ALLOCATED-STOCK.
000064      05 LINE 8 COLUMN 10 VALUE 'POINT OF ORDERING' : _____.
000065      05 LINE 8 COLUMN 24 PIC 9(7) TO T1-POINT-OF-ORDERING.
000066      05 LINE 9 COLUMN 10 VALUE 'BASE INVENTORY' : _____.
000067      05 LINE 9 COLUMN 24 PIC 9(7) TO T1-BASE-INVENTORY.
000068      05 LINE 10 COLUMN 10 VALUE 'SUPPLIER CODE' : _____.
000069      05 LINE 10 COLUMN 24 PIC X(5) TO T1-SUPPLIER-CODE.
000070      05 LINE 11 COLUMN 40 VALUE 'END' : _____.
000071      05 LINE 11 COLUMN 24 PIC X(1) TO END-FLAG.
000072 PROCEDURE DIVISION.
000073     DISPLAY INVENTORY-MASTER-FILE-DETAIL.
000074     ACCEPT INVENTORY-MASTER-FILE-DETAIL.
000075     EXIT METHOD.
000076 END METHOD. 'displayScreen'.
000077 END OBJECT.
000078 END CLASS INVENTORY-MASTER-CORRECTION-view.    ← (2-1)

```

← (2-3)

Fig.43

8. CONTROLLER CLASS (FINAL PROGRAM)

FILE NAME : ZMCN.CBL

000001 IDENTIFICATION DIVISION.
 000002 CLASS-ID. INVENTORY-MASTER-CORRECTION-controller INHERITS CBL-BASE.]← (2-1)
 000003 ENVIRONMENT DIVISION.
 000004 CONFIGURATION SECTION.
 000005 REPOSITORY.
 000006 CLASS CBL-BASE.
 000007 CLASS INVENTORY-MASTER-CORRECTION-view IS 'ZMVI'.]← (2-1)
 000008 CLASS INVENTORY-MASTER-CORRECTION-model IS 'ZMMD'.
 000009
 000010 IDENTIFICATION DIVISION.
 000011 CLASS-OBJECT.
 000012 PROCEDURE DIVISION.
 000013*****
 000014* CLASS METHOD
 000015*****
 000016 IDENTIFICATION DIVISION.
 000017 METHOD-ID. 'create'.
 000018*****
 000019 DATA DIVISION.
 000020 LINKAGE SECTION.
 000021 01 L-INVNTORY-MASTER-CORRECTION-view OBJECT REFERENCE INVENTORY-MASTER-CORRECTION-view ONLY.
 000022 WORKING-STORAGE SECTION.
 000023 01 W-INVNTORY-MASTER-CORRECTION-controller OBJECT REFERENCE SELF.
 000024 PROCEDURE DIVISION USING L-INVNTORY-MASTER-CORRECTION-view.
 000025 INVOK SELF 'CBL-NEW'
 000026 RETURNING W-INVNTORY-MASTER-CORRECTION-controller.
 000027 SET O-INVNTORY-MASTER-CORRECTION-view OF W-INVNTORY-MASTER-CORRECTION-controller
 000028 TO L-INVNTORY-MASTER-CORRECTION-view.
 000029 INVOK INVENTORY-MASTER-CORRECTION-model 'create'
 000030 USING O-INVNTORY-MASTER-CORRECTION-view OF W-INVNTORY-MASTER-CORRECTION-controller
 000031 RETURNING O-INVNTORY-MASTER-CORRECTION-model OF W-INVNTORY-MASTER-CORRECTION-controller.
 000032 INVOK W-INVNTORY-MASTER-CORRECTION-controller 'uiMain'.
 000033 EXIT METHOD.
 000034 END METHOD 'create'.
 000035 END CLASS-OBJECT.
 000036
 000037 IDENTIFICATION DIVISION.
 000038 OBJECT.
 000039 DATA DIVISION.
 000040*****
 000041* INSTANCE VARIABLE
 000042*****
 000043 WORKING-STORAGE SECTION.
 000044 01 O-INVNTORY-MASTER-CORRECTION-controller.
 000045 05 25MINUS INVNTORY-MASTER-CORRECTION-view ONLY PROPERTY.
 000046 05 O-INVNTORY-MASTER-CORRECTION-model ONLY PROPERTY.
 000047
 000048 PROCEDURE DIVISION.
 000049*****
 000050* INSTANCE/METHOD
 000051*****
 000052 IDENTIFICATION DIVISION.
 000053 METHOD-ID. 'uiMain'.]← (2-4)
 000054*****
 000055 PROCEDURE DIVISION.
 000056 PERFORM UNTIL (END FLAG OF O-INVNTORY-MASTER-CORRECTION-view = '1')
 000057 INVOK O-INVNTORY-MASTER-CORRECTION-view 'displayScreen'
 000058 INVOK O-INVNTORY-MASTER-CORRECTION-model 'changeModel'
 000059 END-PERFORM.
 000060 EXIT METHOD.
 000061 END METHOD 'uiMain'.]← (2-1)
 000062 END OBJECT.
 000063 END CLASS INVENTORY-MASTER-CORRECTION-controller.]← (2-1)

Fig. 44

9. MODEL CLASS (FINAL PROGRAM)

FILE NAME : ZMMD.CBL

000001 IDENTIFICATION DIVISION.

000002 CLASS-ID. INVENTORY-MASTER-CORRECTION-model INHERITS CBL-BASE. [← (2-1)

000003 ENVIRONMENT DIVISION.

000004 CONFIGURATION SECTION.

000005 REPOSITORY.

000006 CLASS CBL-BASE.

000007 CLASS INVENTORY-MASTER-CORRECTION-view IS 'ZMVI'. [← (2-1)

000008 CLASS INVENTORY-MASTER-CORRECTION-session IS 'ZMSS'.]

000009

000010 IDENTIFICATION DIVISION.

000011 CLASS-OBJECT.

000012 PROCEDURE DIVISION.

000013*****

000014* CLASS METHOD

000015*****

000016 IDENTIFICATION DIVISION.

000017 METHOD-ID. 'create'.

000018*****

000019 DATA DIVISION.

000020 LINKAGE SECTION.

000021 01 L-INVNTORY-MASTER-CORRECTION-view OBJECT REFERENCE

INVENTORY-MASTER-CORRECTION-view ONLY.

000022 01 L-INVNTORY-MASTER-CORRECTION-model OBJECT REFERENCE SELF.

000023 WORKING-STORAGE SECTION.

000024 01 W-INVNTORY-MASTER-CORRECTION-model OBJECT REFERENCE SELF.

000025

000026 PROCEDURE DIVISION USING L-INVNTORY-MASTER-CORRECTION-view

000027 RETURNING L-INVNTORY-MASTER-CORRECTION-model.

000028 INVOKE SELF 'CBL-NEW'

000029 RETURNING W-INVNTORY-MASTER-CORRECTION-model.

000030 SET O-INVNTORY-MASTER-CORRECTION-view OF W-INVNTORY-MASTER-CORRECTION-model

000031 TO L-INVNTORY-MASTER-CORRECTION-view.

000032 SET L-INVNTORY-MASTER-CORRECTION-model TO W-INVNTORY-MASTER-CORRECTION-model.

000033 EXIT METHOD.

000034 END METHOD 'create'.

000035 END CLASS-OBJECT.

000036

000037 IDENTIFICATION DIVISION.

000038 OBJECT.

000039 DATA DIVISION.

000040*****

000041* INSTANCE VARIABLE

000042*****

000043 WORKING-STORAGE SECTION.

000044 01 T1-INVNTORY-MASTER-CORRECTION- RECORD. [← (2-2)

000045 05 T1-PROCESSING-CATEGORY PIC X(1).

000046 05 T1-PRODUCT-CODE PIC X(6).

000047 05 T1-PRODUCT-NAME PIC X(30).

000048 05 T1-CURRENT-INVNTORY PIC 9(7).

000049 05 T1-ALLOCATED-STOCK PIC 9(7).

000050 05 T1-POINT-OF-ORDERING PIC 9(7).

000051 05 T1-BASE-INVNTORY PIC 9(7).

000052 05 T1-SUPPLIER-CODE PIC X(5).

000053 01 O-INVNTORY-MASTER-CORRECTION-view OBJECT REFERENCE

INVENTORY-MASTER-CORRECTION-view ONLY.

000054 01 O-INVNTORY-MASTER-CORRECTION-session OBJECT REFERENCE

INVENTORY-MASTER-CORRECTION-session ONLY.

:

Fig. 45

(9. MODEL CLASS —CONTINUED)

```

000056 PROCEDURE DIVISION.
000057*****+
000058* INSTANCE/METHOD
000059*****+
000060 IDENTIFICATION DIVISION.
000061 METHOD-ID. 'changeModel'.
000062*****+
000063 PROCEDURE DIVISION.
000064 MAIN PROCESS.
000065     PERFORM INVENTORY-MASTER-INPUT.
000066     PERFORM TRANSFORMATION-CONTROL.
000067     EXIT METHOD.
000068*****+
000069 TRANSFORMATION CONTROL.
000070     PERFORM TRANSFORMATION.
000071     PERFORM INVENTORY-MASTER-INPUT.
000072*****+
000073 INVENTORY MASTER INPUT.
000074     INVOKE SELF 'moveFromView'.
000075*****+
000076 TRANSFORMATION.
000077     IF (T1-CURRENT-VENTORY IS NUMERIC) AND
000078         (T1-ALLOCATED-STOCK IS NUMERIC)
000079     THEN
000080         PERFORM CHECKED-VENTORY-MASTER-CORRECTION-OUTPUT
000081     END-IF.
000082*****+
000083 CHECKED-VENTORY-MASTER-CORRECTION-OUTPUT.
000084     INVOKE INVENTORY-MASTER-CORRECTION-session 'create'
000085         RETURNING O-VENTORY-MASTER-CORRECTION-session.
000086     INVOKE O-VENTORY-MASTER-CORRECTION-session 'checkTransaction'
000087         USING T1-VENTORY-MASTER-CORRECTION-RECORD.
000088 END METHOD 'changeModel'.
000089
000090*****+
000091 IDENTIFICATION DIVISION.
000092 METHOD-ID. 'moveFromView'.
000093*****+
000094 PROCEDURE DIVISION.
000095     MOVE T1-PROCESSING-CATEGORY OF O-VENTORY-MASTER-CORRECTION-view TO T1-PROCESSING-CATEGORY.
000096     MOVE T1-PRODUCT-CODE OF O-VENTORY-MASTER-CORRECTION-view TO T1-PRODUCT-CODE.
000097     MOVE T1-PRODUCT-NAME OF O-VENTORY-MASTER-CORRECTION-view TO T1-PRODUCT-NAME.
000098     MOVE T1-CURRENT-VENTORY OF O-VENTORY-MASTER-CORRECTION-view TO T1-CURRENT-VENTORY.
000099     MOVE T1-ALLOCATED-STOCK OF O-VENTORY-MASTER-CORRECTION-view TO T1-ALLOCATED-STOCK.
000100    MOVE T1-POINT-OF-ORDERING OF O-VENTORY-MASTER-CORRECTION-view TO T1-POINT-OF-ORDERING.
000101    MOVE T1-BASE-VENTORY OF O-VENTORY-MASTER-CORRECTION-view TO T1-BASE-VENTORY.
000102    MOVE T1-SUPPLIER-CODE OF O-VENTORY-MASTER-CORRECTION-view TO T1-SUPPLIER-CODE.
000103    EXIT METHOD.
000104 END METHOD 'moveFromView'.
000105 END OBJECT.
000106 END CLASS INVENTORY-MASTER-CORRECTION-model. ]← (2-1)

```

Fig.46

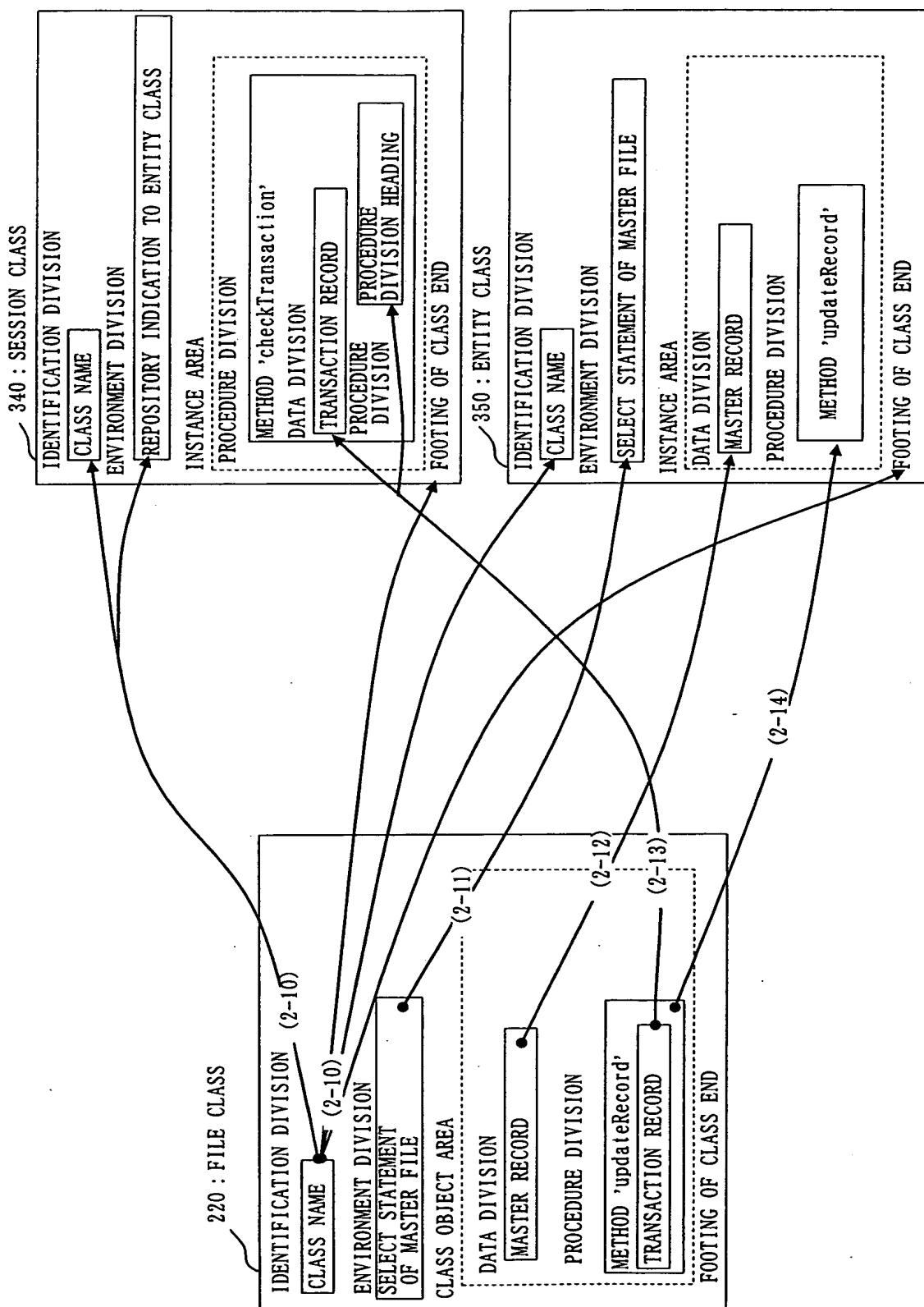


Fig.47

NUMBER	COMPONENT TO BE EXTRACTED	LOCATION AFTER TRANSFORMATION	STRUCTURAL, SYNTAX TRANSFORMATION
<u>ORIGIN OF EXTRACTION: FILE, CLASS IDENTIFICATION DIVISION</u>			
(2-10)	CLASS NAME	CLASS NAME ENVIRONMENT DIVISION INTERNAL NAME FOR REPOSITORY INDICATION FOR ENTITY CLASS FOOTING OF CLASS END	APPEND AFFIX OF SESSION CLASS • APPEND AFFIX OF ENTITY CLASS • FOR EXTERNAL NAME, INSERT FILE NAME OF ENTITY CLASS ACCORDING • TO NAMING RULE APPEND AFFIX OF SESSION CLASS
<u>ORIGIN OF EXTRACTION: FILE, MATCHING AND UPDATING METHOD → AFTER TRANSFORMATION: SESSION, INSTANCE METHOD, TRANSACTION CHECKING METHOD</u>			
(2-13)	TRANSACTION RECORD	DATA DIVISION → LINKAGE SECTION PROCEDURE DIVISION HEADING	INSERT ONLY RECORD NAME

Fig. 48

NUMBER	COMPONENT TO BE EXTRACTED	LOCATION AFTER TRANSFORMATION	STRUCTURAL, SYNTAX TRANSFORMATION	REASON FOR THIS EXTRACTION/ TRANSFORMATION
<u>ORIGIN OF EXTRACTION: FILE, CLASS IDENTIFICATION DIVISION</u>				
(2-10)	CLASS NAME	CLASS NAME	APPEND AFFIX OF ENTITY CLASS	
<u>ORIGIN OF EXTRACTION: FILE, ENVIRONMENT DIVISION</u>				
(2-11)	"SELECT" STATEMENT OF MASTER FILE	ENVIRONMENT DIVISION OF INSTANCE	NONE	
<u>ORIGIN OF EXTRACTION: FILE, CLASS VARIABLE</u>				
(2-12)	DEFINITION OF MASTER RECORD	INSTANCE VARIABLE		
<u>ORIGIN OF EXTRACTION: FILE, MATCHING AND UPDATING METHOD -> AFTER TRANSFORMATION: ENTITY, INSTANCE METHOD, MATCHING AND UPDATING METHOD</u>				
(2-14, MATCHING AND UPDATING METHOD) IS EXTRACTED AND INSERTED WITHOUT CHANGE				

10. SESSION CLASS (FINAL PROGRAM)

FILE NAME : ZMSS.CBL

000001 IDENTIFICATION DIVISION.

000002 CLASS-ID. INVENTORY-MASTER-CORRECTION-session INHERITS CBL-BASE.]← (2-10)

000003 ENVIRONMENT DIVISION.

000004 CONFIGURATION SECTION.

000005 REPOSITORY.

000006 CLASS CBL-BASE.

000007 CLASS INVENTORY-MASTER-CORRECTION-entity IS 'ZMEN'.]← (2-10)

000009 IDENTIFICATION DIVISION.

000010 CLASS-OBJECT.

000011 PROCEDURE DIVISION.

000012*****

000013* CLASS METHOD

000014*****

000015 IDENTIFICATION DIVISION.

000016 METHOD-ID. 'create'.

000017 DATA DIVISION.

000018 LINKAGE SECTION.

000019 01 L-INVNTORY-MASTER-CORRECTION-session OBJECT REFERENCE SELF.

000020 WORKING-STORAGE SECTION.

000021 01 W-INVNTORY-MASTER-CORRECTION-session OBJECT REFERENCE SELF.

000022 PROCEDURE DIVISION RETURNING L-INVNTORY-MASTER-CORRECTION-session.

000023 INVOKE SELF 'CBL-NEW'

000024 RETURNING W-INVNTORY-MASTER-CORRECTION-session.

000025 INVOKE INVNTORY-MASTER-CORRECTION-entity 'create'

000026 RETURNING O-INVNTORY-MASTER-CORRECTION-entity OF
W-INVNTORY-MASTER-CORRECTION-session.

000027 SET L-INVNTORY-MASTER-CORRECTION-session TO

W-INVNTORY-MASTER-CORRECTION-session.

000028 EXIT METHOD.

000029 END METHOD 'create'.

000030 END CLASS-OBJECT.

000031

000032 IDENTIFICATION DIVISION.

000033 OBJECT.

000034 DATA DIVISION.

000035*****

000036* INSTANCE VARIABLE

000037*****

000038 WORKING-STORAGE SECTION.

000039 01 O-INVNTORY-MASTER-CORRECTION-entity OBJECT REFERENCE

INVNTORY-MASTER-CORRECTION-entity ONLY.

000040

:

Fig. 50

((10. SESSION CLASS --CONTINUED))

```

000041 PROCEDURE DIVISION.
000042 ****
000043* INSTANCE/METHOD
000044 ****
000045 IDENTIFICATION DIVISION.
000046 METHOD-ID. 'checkTransaction'.
000047 DATA DIVISION.
000048 LINKAGE SECTION.
000049 01 T1-VENTORY-MASTER-CORRECTION-RECORD. ← (2-13)
000050    05 T1-PROCESSING-CATEGORY PIC X(1).
000051        88 T1-ADD VALUE '1'.
000052        88 T1-UPDATE VALUE '2'.
000053        88 T1-DELETE VALUE '9'.
000054    05 T1-PRODUCT-CODE      PIC X(6).
000055    05 T1-PRODUCT-NAME    PIC X(30).
000056    05 T1-CURRENT-VENTORY PIC 9(7).
000057    05 T1-ALLOCATED-STOCK PIC 9(7).
000058    05 T1-POINT-OF-ORDERING PIC 9(7).
000059    05 T1-BASE-VENTORY    PIC 9(7).
000060    05 T1-SUPPLIER-CODE   PIC X(5).
000061 WORKING-STORAGE SECTION.
000062 01 W-FILE-ERROR-FLAG    PIC X(1).
000063    88 RECORD-EXIST VALUE '1'.
000064    88 RECORD-NOT-EXIST VALUE '0'.
000065
000066 PROCEDURE DIVISION USING T1-VENTORY-MASTER-CORRECTION-RECORD, ← (2-13)
000067    INVOKE O-VENTORY-MASTER-CORRECTION-entity 'recordExists',
000068        RETURNING W-FILE-ERROR-FLAG.
000069    EVALUATE T1-PROCESSING-CATEGORY
000070        WHEN T1-ADD
000071            IF RECORD-NOT-EXIST
000072                THEN
000073                    INVOKE O-VENTORY-MASTER-CORRECTION-entity 'updateRecord'
000074                        USING T1-VENTORY-MASTER-CORRECTION-RECORD
000075                END-IF
000076        WHEN T1-UPDATE T1-DELETE
000077            IF RECORD-EXIST
000078                THEN
000079                    INVOKE O-VENTORY-MASTER-CORRECTION-entity 'updateRecord'
000080                        USING T1-VENTORY-MASTER-CORRECTION-RECORD
000081                END-IF
000082    END-EVALUATE.
000083    EXIT METHOD.
000084 END METHOD 'checkTransaction'.
000085 END OBJECT.
000086 END CLASS INVENTORY-MASTER-CORRECTION-session. ← (2-10)

```

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Fig.51

11. ENTITY CLASS (FINAL PROGRAM)

FILE NAME : ZMEN.CBL

000001 IDENTIFICATION DIVISION.

000002 CLASS-ID. INVENTORY-MASTER-CORRECTION-entity INHERITS CBL-BASE.]← (2-10)

000003 ENVIRONMENT DIVISION.

000004 CONFIGURATION SECTION.

000005 REPOSITORY.

000006 CLASS CBL-BASE.

000007

000008 IDENTIFICATION DIVISION.

000009 CLASS-OBJECT.

000010 PROCEDURE DIVISION.

000011*****

000012* CLASS METHOD

000013*****

000014 IDENTIFICATION DIVISION.

000015 METHOD-ID. 'create'.

000016 DATA DIVISION.

000017 LINKAGE SECTION.

000018 01 L-INVVENTORY-MASTER-CORRECTION-entity OBJECT REFERENCE SELF.

000019 WORKING-STORAGE SECTION.

000020 01 W-INVVENTORY-MASTER-CORRECTION-entity OBJECT REFERENCE SELF.

000021 PROCEDURE DIVISION RETURNING L-INVVENTORY-MASTER-CORRECTION-entity.

000022 INVOKE SELF 'CBL-NEW'

000023 RETURNING W-INVVENTORY-MASTER-CORRECTION-entity.

000024 SET L-INVVENTORY-MASTER-CORRECTION-entity TO W-INVVENTORY-MASTER-CORRECTION-entity.

000025 EXIT METHOD.

000026 END METHOD 'create'.

000027 END CLASS-OBJECT.

000028

000029 IDENTIFICATION DIVISION.

000030 OBJECT.

000031 ENVIRONMENT DIVISION.

000032 INPUT-OUTPUT SECTION.

000033 FILE-CONTROL.

000034 SELECT M1-INVVENTORY-MASTER-FILE]← (2-11)

000035 ASSIGN TO "SYS030-DA-DK-1"

000036 ORGANIZATION INDEXED

000037 ACCESS RANDOM

000038 RECORD KEY M1-PRODUCT-CODE.

000039 DATA DIVISION.

000040*****

000041* INSTANCE VARIABLE

000042*****

000043 FILE SECTION.

000044 FD M1-INVVENTORY-MASTER-FILE.

000045 01 M1-INVVENTORY-MASTER-RECORD.]← (2-12)

000046 05 M1-PRODUCT-CODE PIC X(6).

000047 05 M1-PRODUCT-NAME PIC X(30).

000048 05 M1-CURRENT-INVVENTORY PIC S9(7).

000049 05 M1-ALLOCATED-STOCK PIC S9(7).

000050 05 M1-POINT-OF-ORDERING PIC S9(7).

000051 05 M1-BASE-INVVENTORY PIC S9(7).

000052 05 M1-SUPPLYER-CODE PIC X(5).

000053

⋮

Fig. 52

(11. ENTITY CLASS --CONTINUED (1))

```

000054 PROCEDURE DIVISION.
000055*****+
000056* INSTANCE METHOD
000057*****+
000058 IDENTIFICATION DIVISION.
000059 METHOD-ID. 'recordExists'
000060*****+
000061 DATA DIVISION.
000062 LINKAGE SECTION.
000063 01 L-PRODUCT-CODE PIC X(6).
000064 01 L-FILE-ERROR-FLAG PIC X(1).
000065     88 RECORD-EXIST VALUE '1'.
000066     88 RECORD-NOT-EXIST VALUE '0'.
000067 PROCEDURE DIVISION USING L-PRODUCT-CODE
000068             RETURNING L-FILE-ERROR-FLAG
000069 MAIN PROCESS.
000070     OPEN INPUT M1-INVENTORY-MASTER-FILE
000071     MOVE L-PRODUCT-CODE TO M1-PRODUCT-CODE.
000072     READ M1-INVENTORY-MASTER-FILE
000073         INVALID
000074             SET RECORD-NOT-EXIST TO TRUE
000075         NOT INVALID
000076             SET RECORD-EXIST TO TRUE
000077     END-READ.
000078     EXIT METHOD.
000079 END METHOD 'recordExists'.
000080
000081*****+
000082 IDENTIFICATION DIVISION.
000083 METHOD-ID. 'updateRecord'.
000084*****+
000085 DATA DIVISION.
000086 LINKAGE SECTION.
000087 01 T1-INVENTORY-MASTER-CORRECTION-RECORD.
000088     05 T1-PROCESSING-CATEGORY    PIC X(1).
000089     88 T1-ADD      VALUE '1'.
000090     88 T1-UPDATE    VALUE '2'.
000091     88 T1-DELETE    VALUE '9'.
000092     05 T1-PRODUCT-CODE    PIC X(6).
000093     05 T1-PRODUCT-NAME    PIC X(30).
000094     05 T1-CURRENT-INVENTORY PIC 9(7).
000095     05 T1-ALLOCATED-STOCK PIC 9(7).
000096     05 T1-POINT-OF-ORDERING PIC 9(7).
000097     05 T1-BASE-INVENTORY  PIC 9(7).
000098     05 T1-SUPPLIER-CODE  PIC X(5).
000099
000100 WORKING-STORAGE SECTION.
000101 01 WORKING AREA.
000102     05 W-TRANSACTION-KEY PIC X(6) VALUE LOW-VALUE.
000103     05 W-MASTER-KEY PIC X(6).
000104 01 FLAG.
000105     05 FILE-END-FLAG1 PIC X VALUE '0'.
000106     05 FILE-END-FLAG2 PIC X VALUE '0'.
000107     05 PROCESS-END-FLAG PIC X VALUE '0'.
000108
000109 PROCEDURE DIVISION USING T1-INVENTORY-MASTER-CORRECTION-RECORD.
000110 MAIN PROCESS.
000111     OPEN I-O M1-INVENTORY-MASTER-FILE
000112     PERFORM INVENTORY-MASTER-CORRECTION-INPUT.
000113     PERFORM OLD-INVENTORY-MASTER-INPUT.
000114     PERFORM UPDATE-CONTROL.
000115     CLOSE M1-INVENTORY-MASTER-FILE
000116     EXIT METHOD.
000117*****+
000118 UPDATE CONTROL.
000119     IF (W-TRANSACTION-KEY = W-MASTER-KEY)
000120         THEN
000121             PERFORM MATCHING
000122         ELSE
000123             PERFORM TRANSACTION-PROCESS

```

← (2-14)

:

Fig.53

(11. ENTITY CLASS --CONTINUED (2))

```

000125*****+
000126 MATCHING.
000127     IF (W-TRANSACTION-KEY = HIGH-VALUE)
000128         THEN
000129             MOVE '1' TO PROCESS-END-FLAG
000130         ELSE
000131             EVALUATE T1-PROCESSING-CATEGORY
000132                 WHEN T1-UPDATE
000133                     PERFORM UPDATE
000134                     PERFORM NEW-NVENTORY-MASTER-OUTPUT
000135                 WHEN T1-DELETE
000136                     PERFORM DELETE-PROCESS
000137             END-EVALUATE
000138         END-IF.
000139*****+
000140 TRANSACTION.
000141     IF T1-ADD
000142         THEN
000143             PERFORM ADD
000144             PERFORM ADD NEW-NVENTORY-MASTER-OUTPUT.
000145     END-IF.
000146*****+
000147 UPDATE.
000148     MOVE T1-PRODUCT-NAME      TO M1-PRODUCT-NAME.
000149     MOVE T1-CURRENT-INVENTORY  TO M1-CURRENT-INVENTORY.
000150     MOVE T1-ALLOCATED-STOCK   TO M1-ALLOCATED-STOCK.
000151     MOVE T1-POINT-OF-ORDERING TO M1-POINT-OF-ORDERING.
000152     MOVE T1-BASE-INVENTORY    TO M1-BASE-INVENTORY.
000153     MOVE T1-SUPPLIER-CODE    TO M1-SUPPLIER-CODE.
000154*****+
000155 ADD.
000156     MOVE T1-PRODUCT-CODE      TO M1-PRODUCT-CODE.
000157     MOVE T1-PRODUCT-NAME      TO M1-PRODUCT-NAME.
000158     MOVE T1-CURRENT-INVENTORY  TO M1-CURRENT-INVENTORY.
000159     MOVE T1-ALLOCATED-STOCK   TO M1-ALLOCATED-STOCK.
000160     MOVE T1-POINT-OF-ORDERING TO M1-POINT-OF-ORDERING.
000161     MOVE T1-BASE-INVENTORY    TO M1-BASE-INVENTORY.
000162     MOVE T1-SUPPLIER-CODE    TO M1-SUPPLIER-CODE.
000163*****+
000164 ADD-NEW-NVENTORY-MASTER-OUTPUT.
000165     WRITE M1-INVENTORY-MASTER-RECORD
000166     INVALID MOVE '1' TO PROCESS-END-FLAG.
000167*****+
000168 NEW-NVENTORY-MASTER-OUTPUT.
000169     REWRITE M1-INVENTORY-MASTER-RECORD
000170     INVALID MOVE '1' TO PROCESS-END-FLAG.
000171*****+
000172 DELETE.
000173     DELETE M1-INVENTORY-MASTER-RECORD
000174     INVALID MOVE '1' TO PROCESS-END-FLAG.
000175*****+
000176 INVENTORY-MASTER-CORRECTION-INPUT.
000177     MOVE T1-PRODUCT-CODE
000178         TO W-TRANSACTION-KEY M1-PRODUCT-CODE
000179*****+
000180 OLD-INVENTORY-MASTER-INPUT.
000181     READ M1-INVENTORY-MASTER-FILE
000182         INVALID MOVE '1' TO FILE-END-FLAG 2 .
000183     IF (FILE-END-FLAG 2 = '1')
000184         THEN
000185             MOVE HIGH-VALUE TO W-MASTER-KEY
000186         ELSE
000187             MOVE M1-PRODUCT-CODE TO W-MASTER-KEY
000188         END-IF.
000189 END METHOD 'updateRecord'.
000190 END OBJECT.
000191 END CLASS INVENTORY-MASTER-CORRECTION-entity.

```

← (2-14
CONTINUED)

← (2-10)

Fig.54

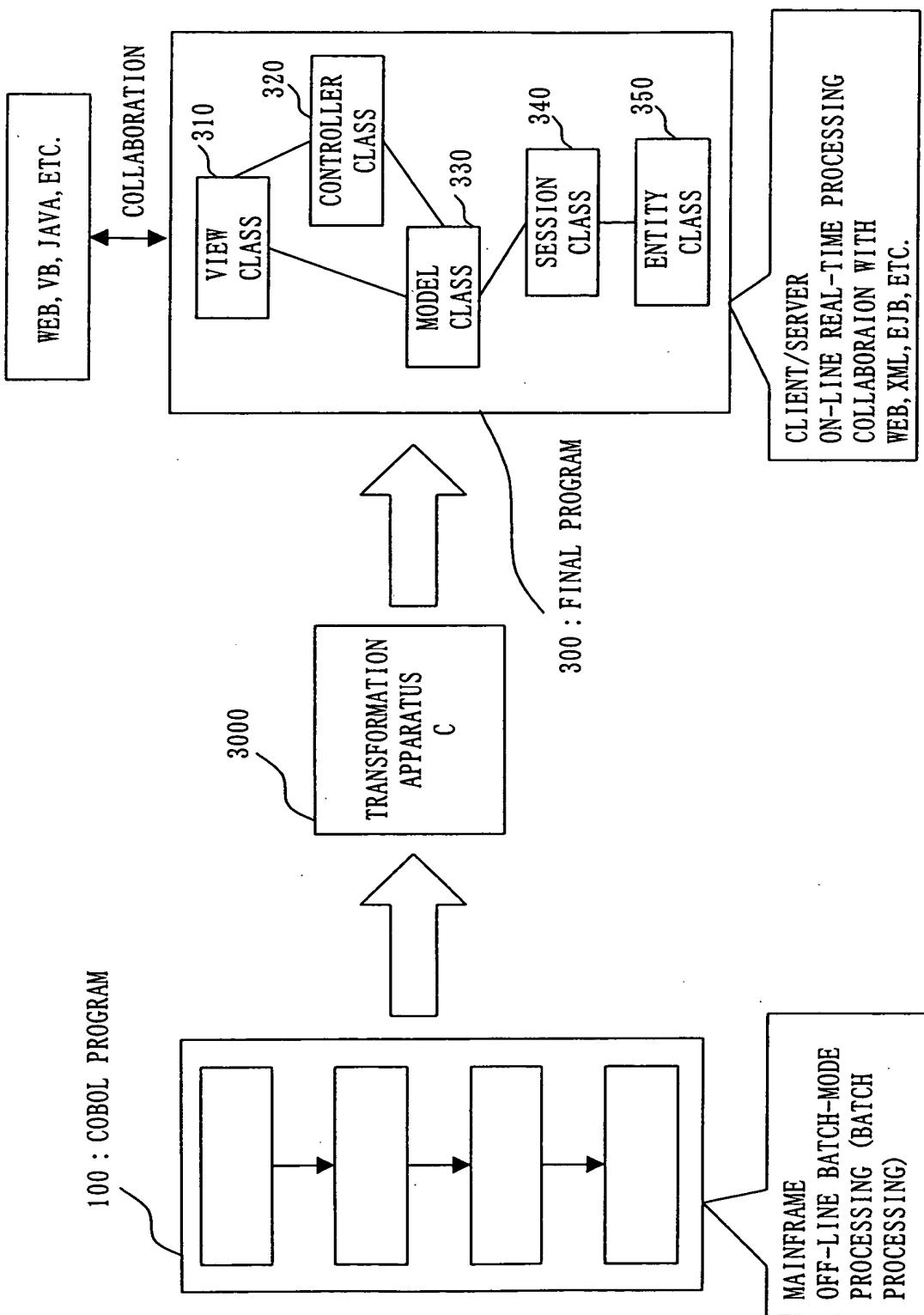


Fig.55

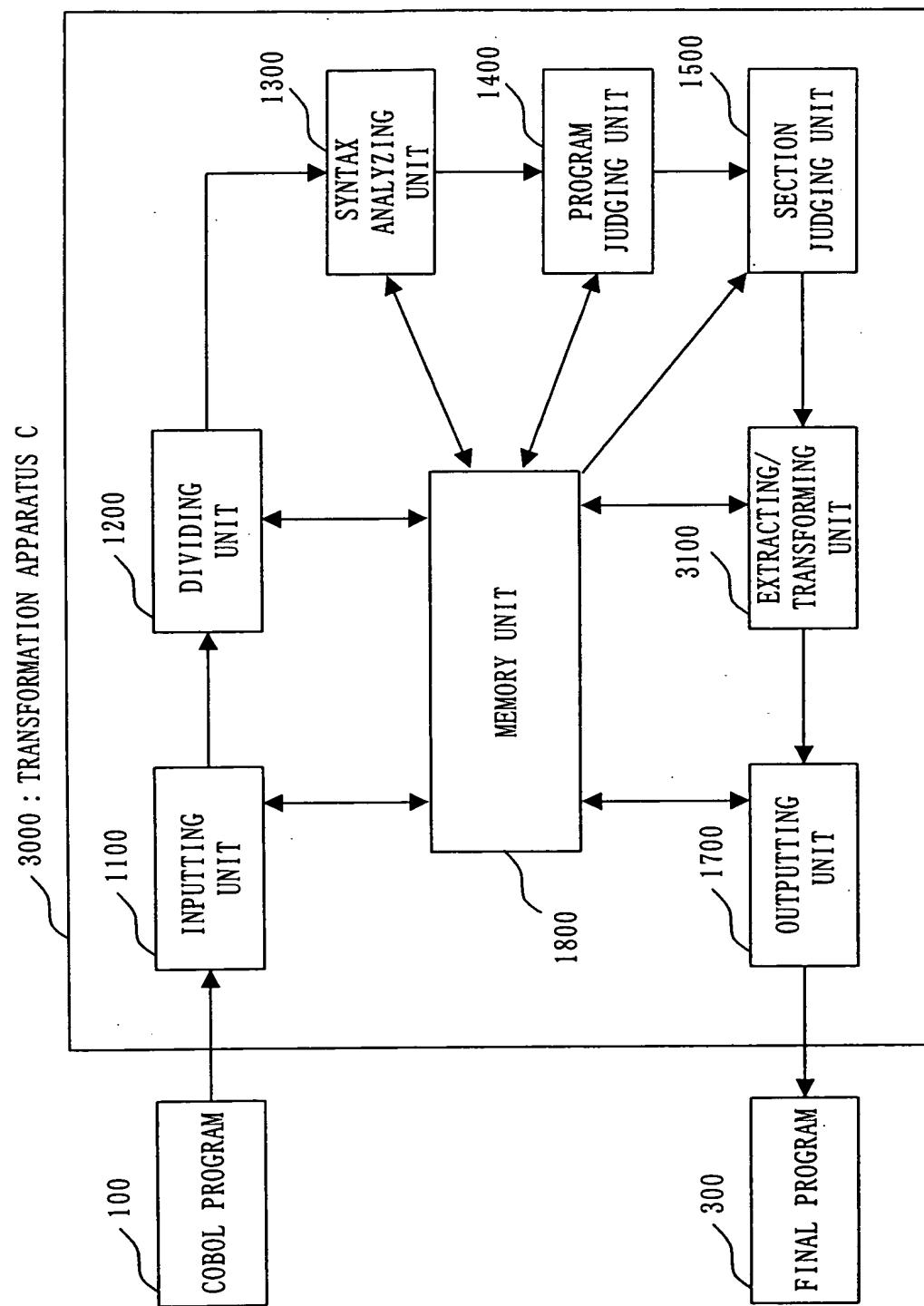
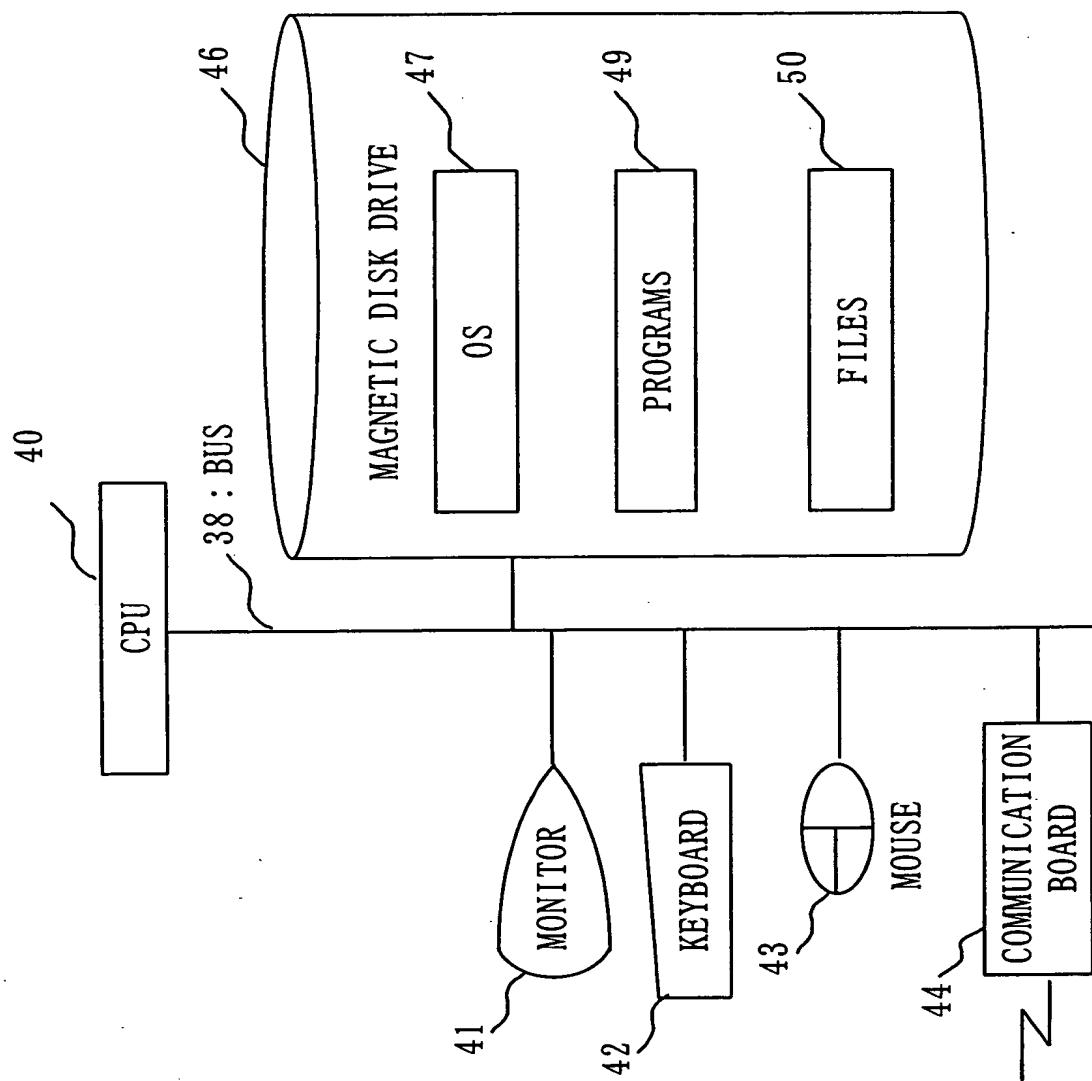


Fig.56



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Fig. 57

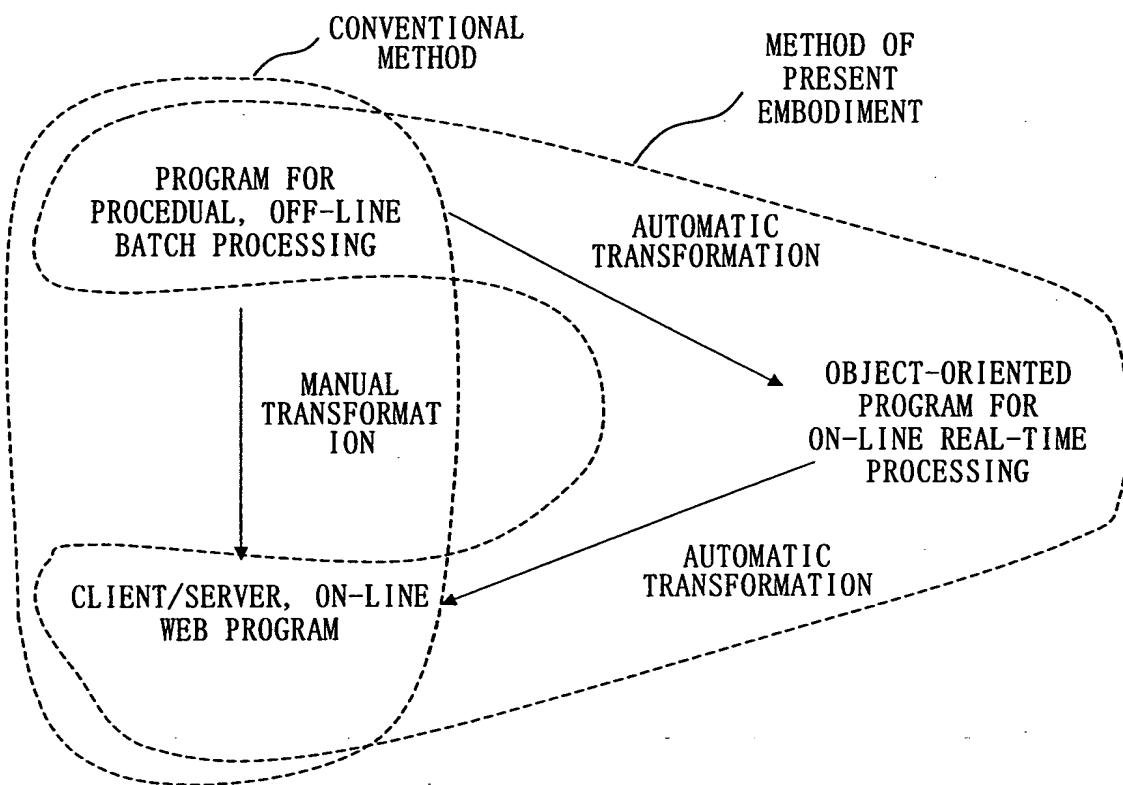
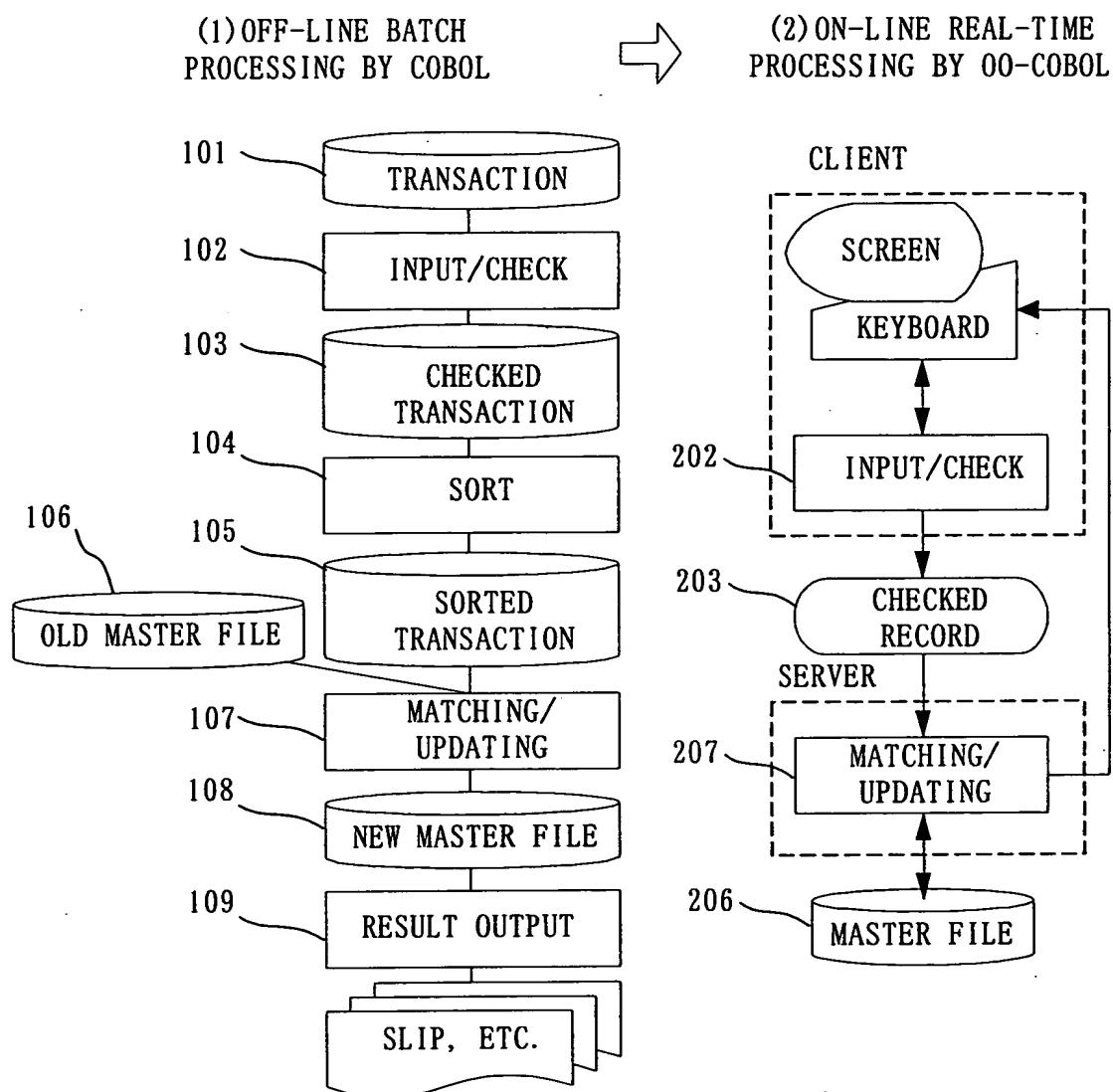


Fig. 58



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Fig. 59

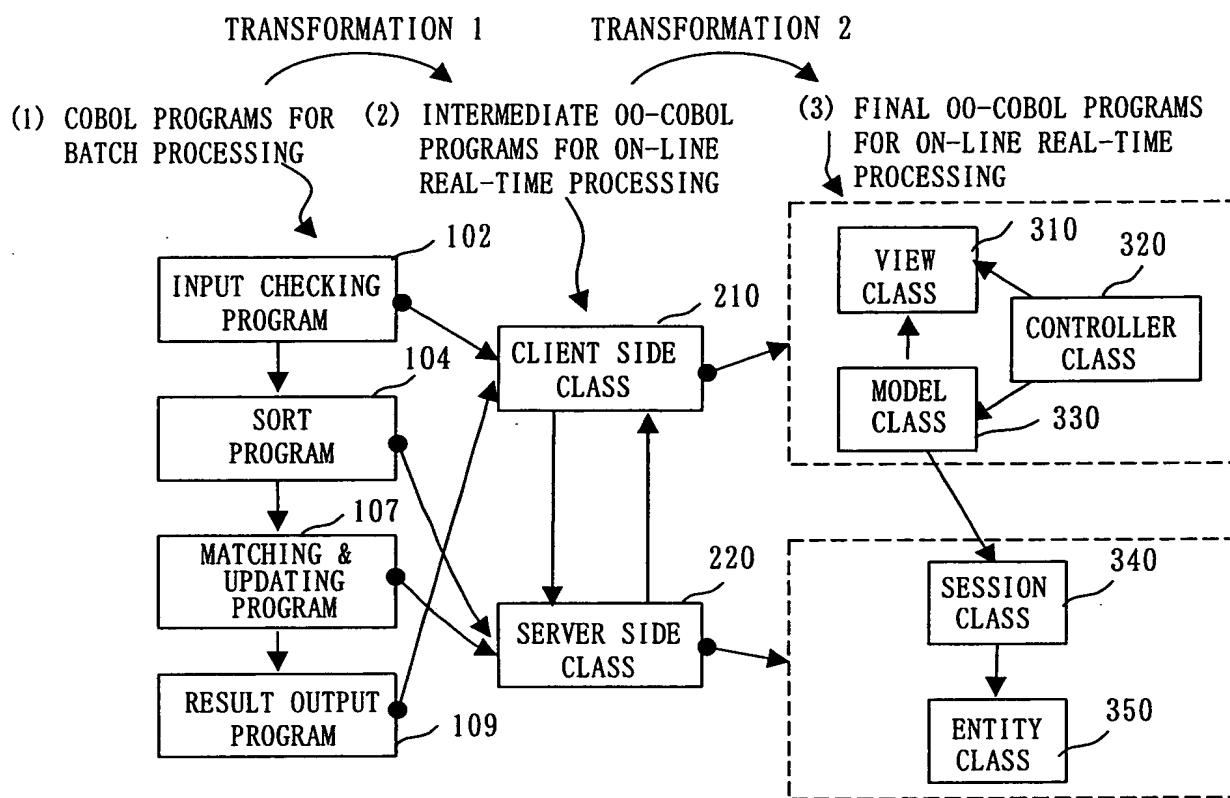
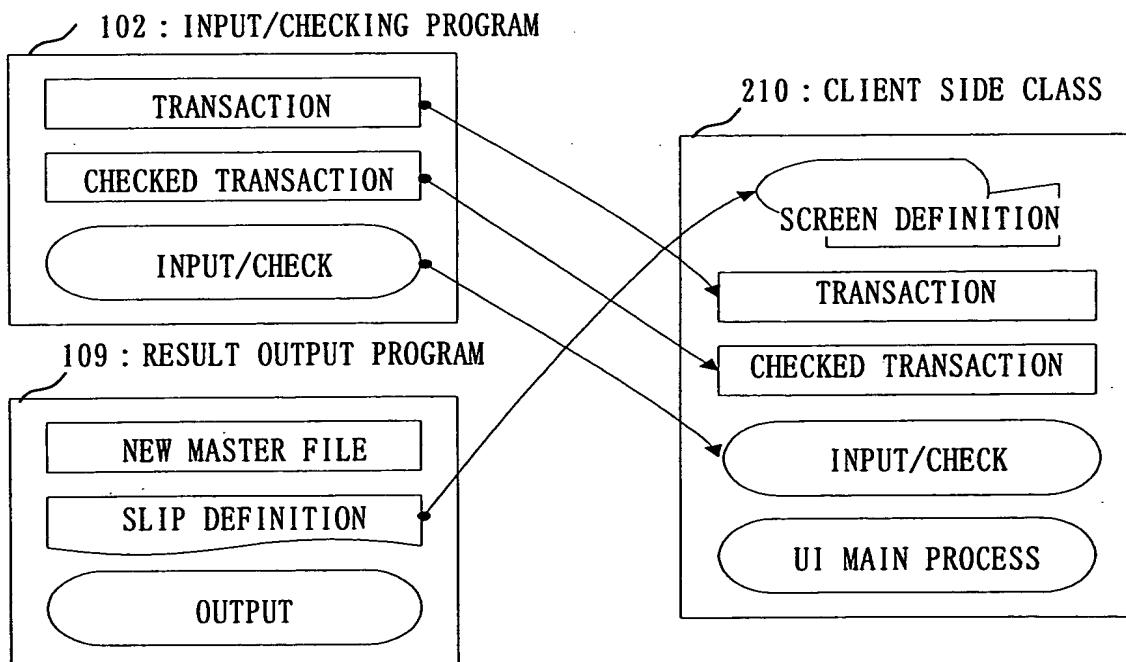


Fig. 60



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Fig. 61

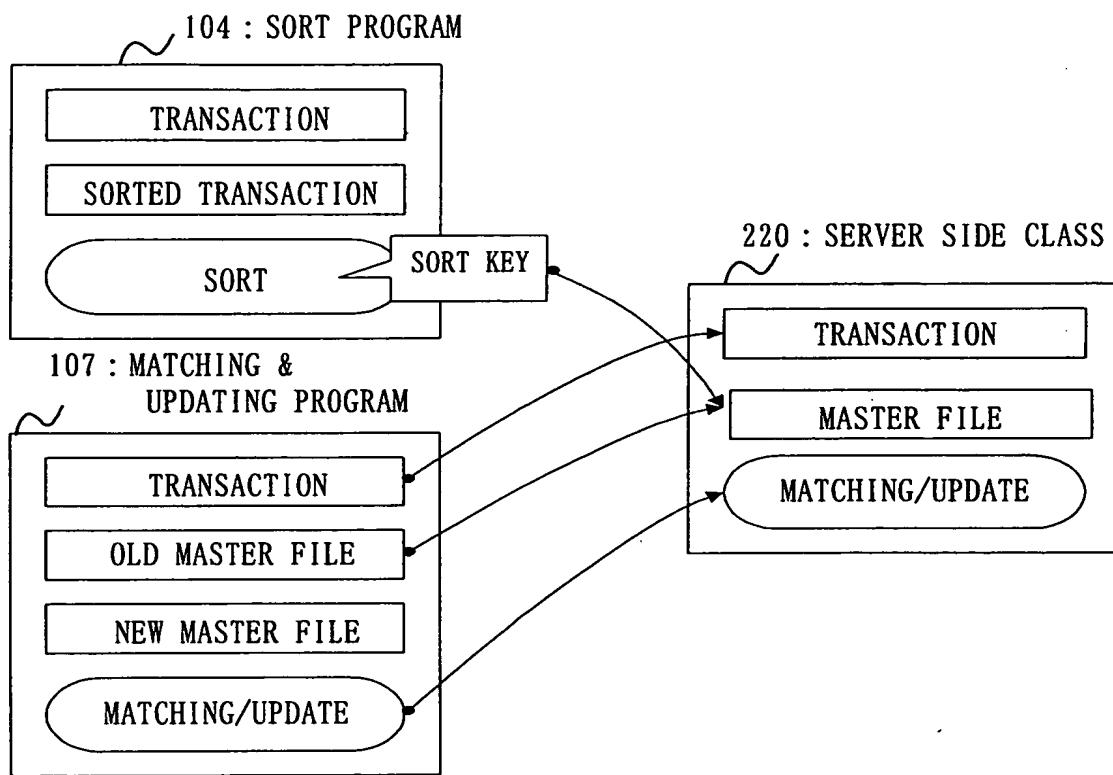
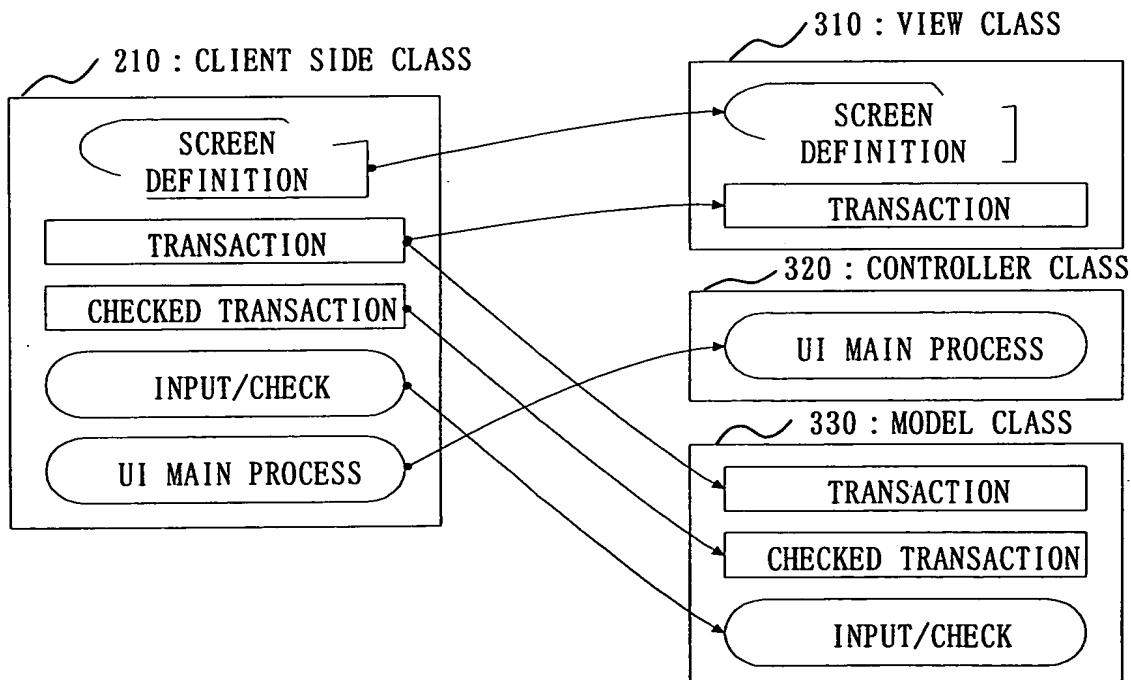


Fig. 62



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Fig. 63

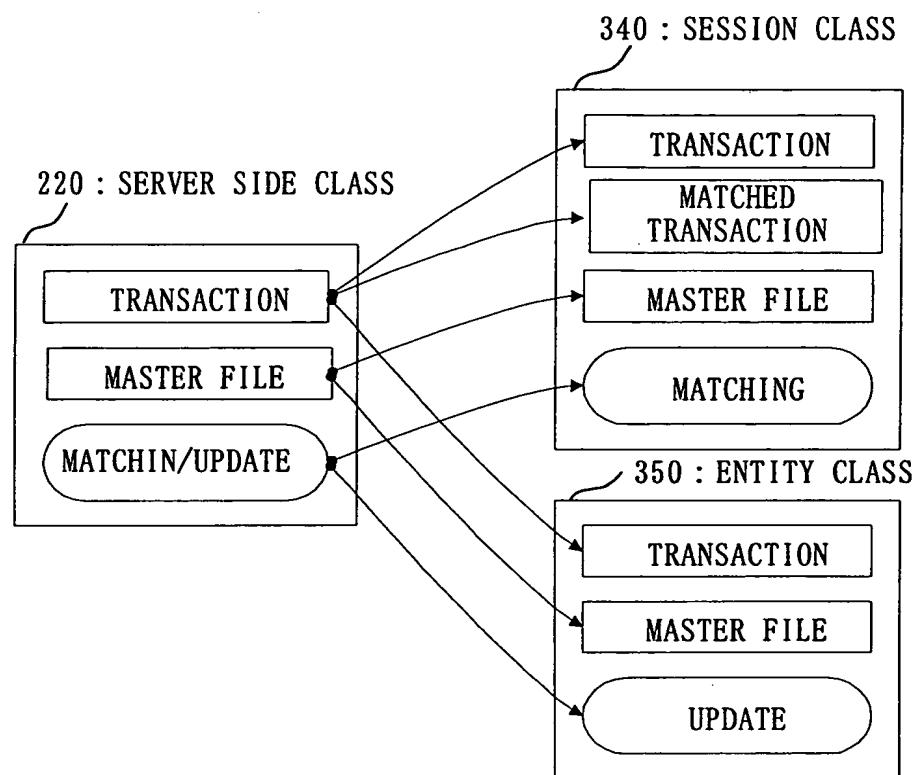
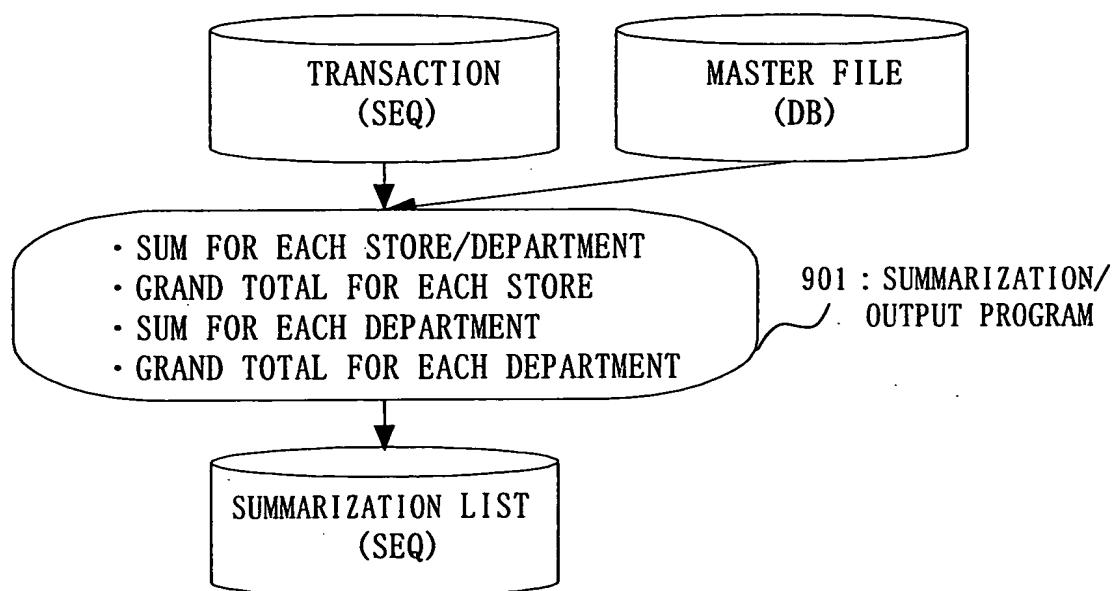
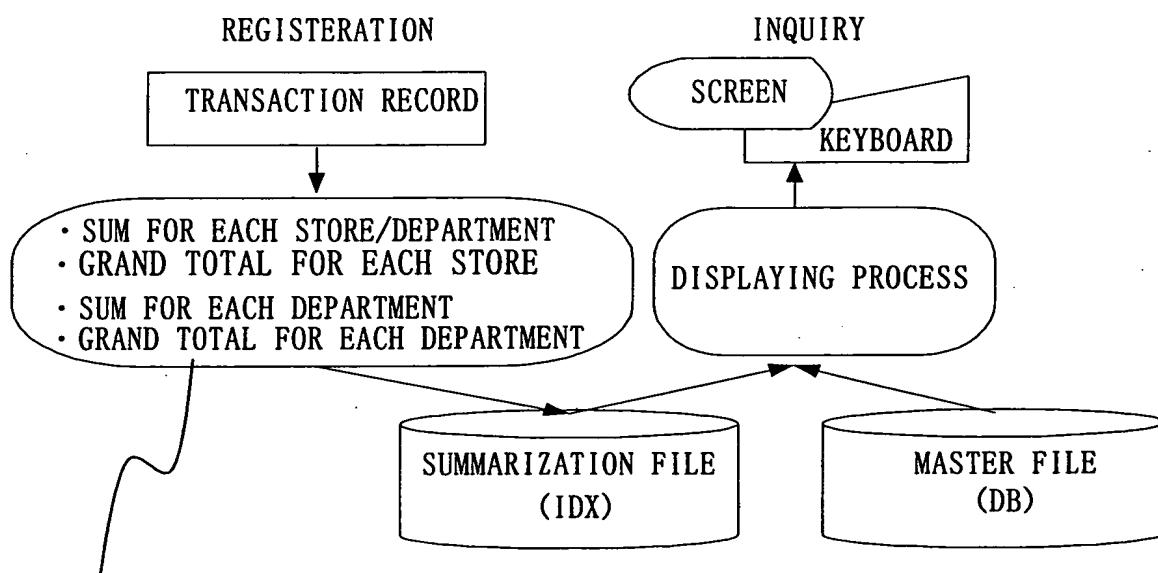


Fig. 64



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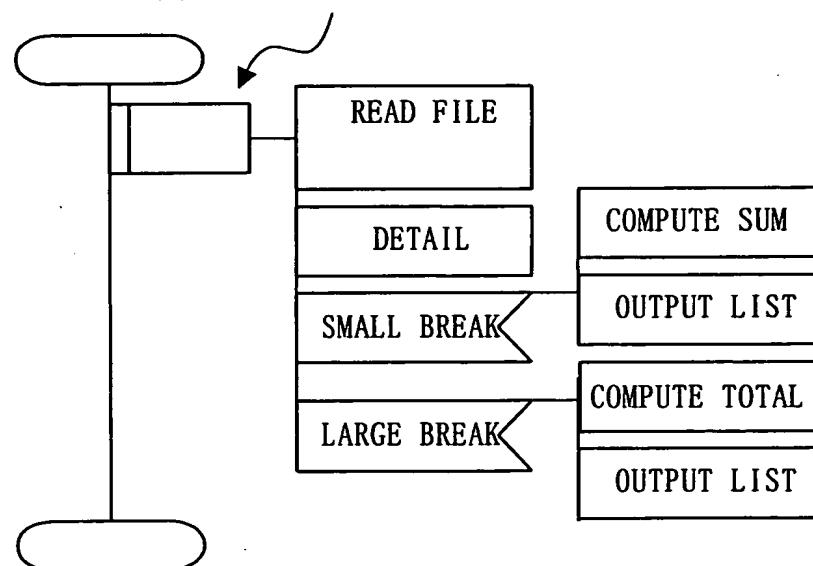
Fig. 65



901a : TRANSFORMED SUMMARIZATION/OUTPUT PROGRAM

Fig. 66

(1) CURRENT SYSTEM (SUMMARIZATION/OUTPUT PROGRAM 901)



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Fig. 67

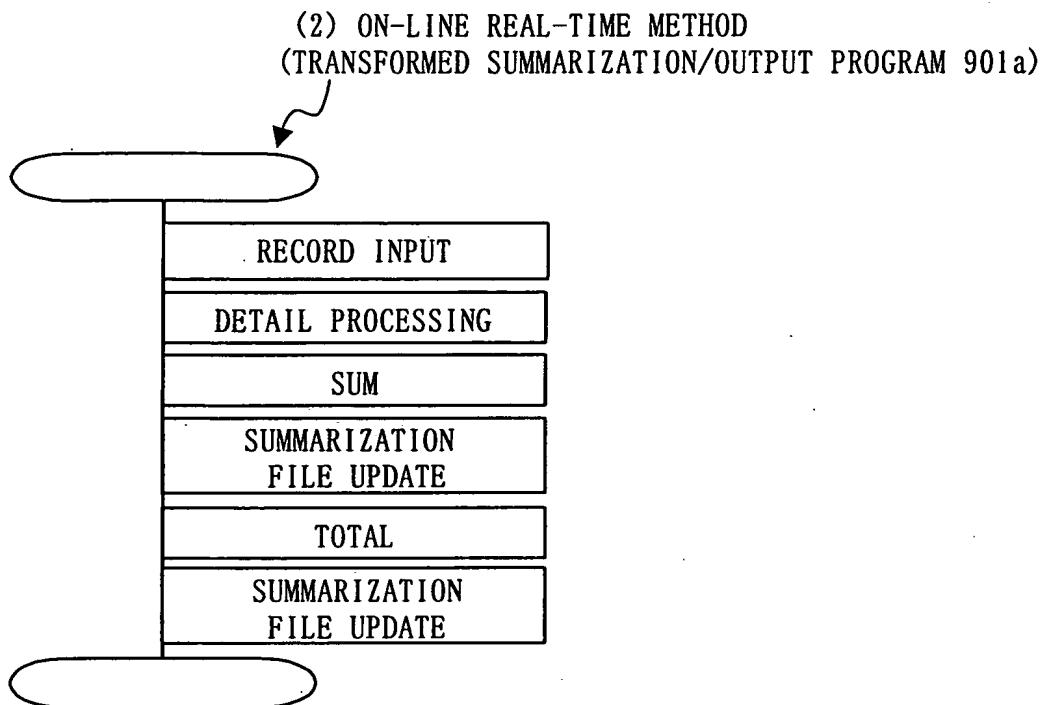
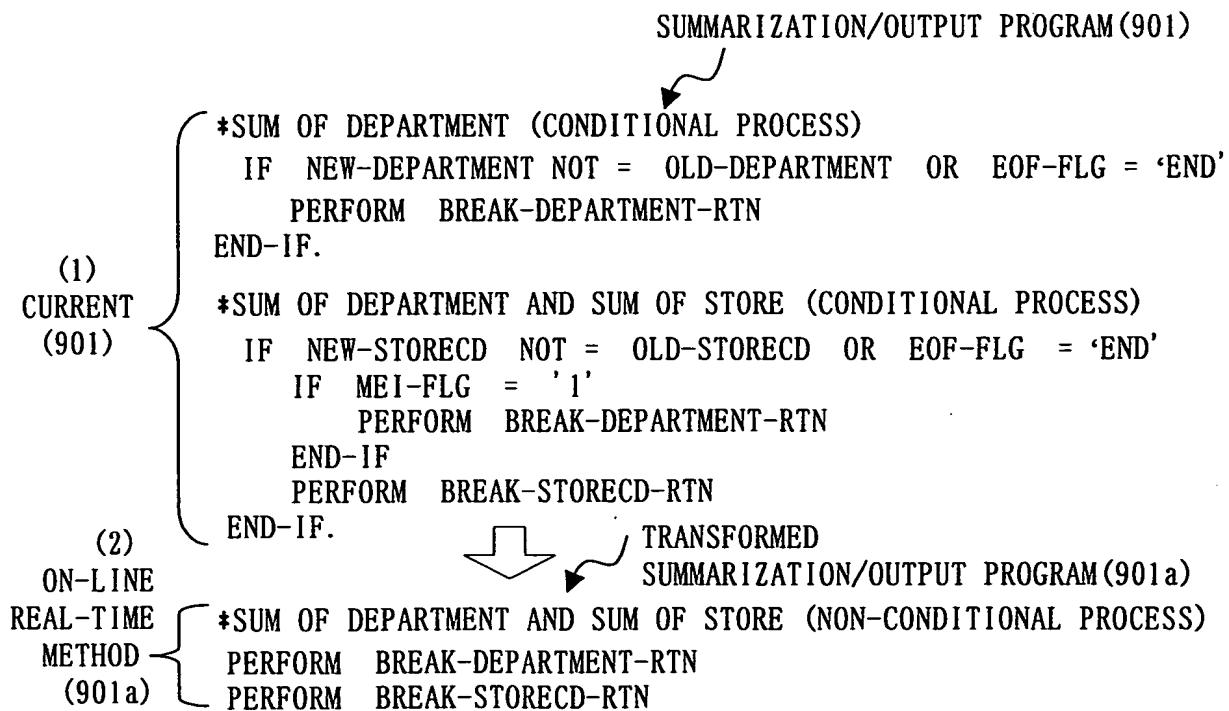


Fig. 68



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Fig. 69

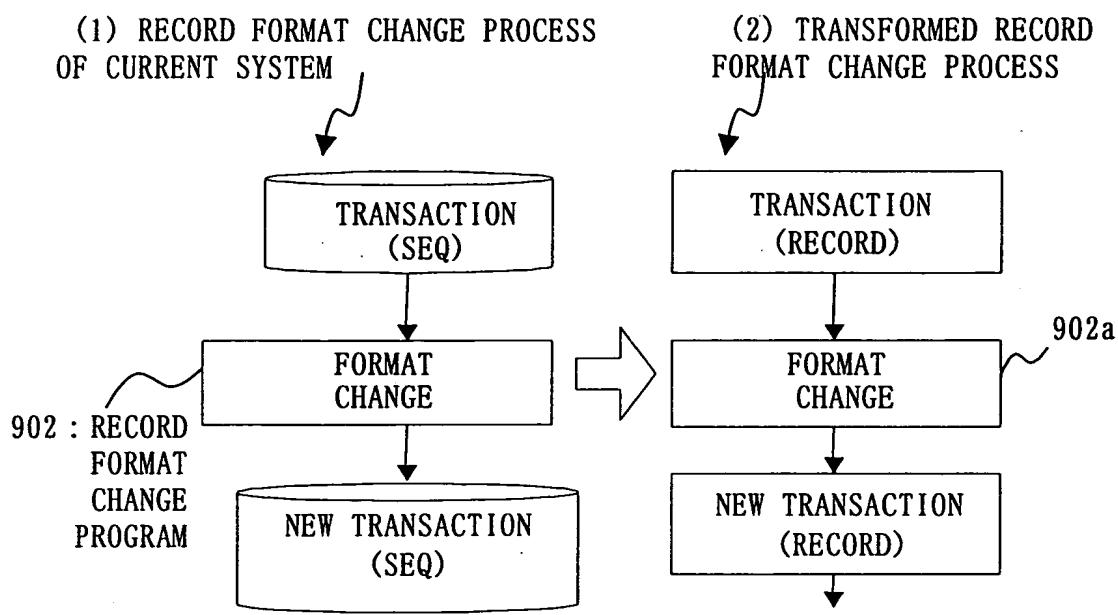
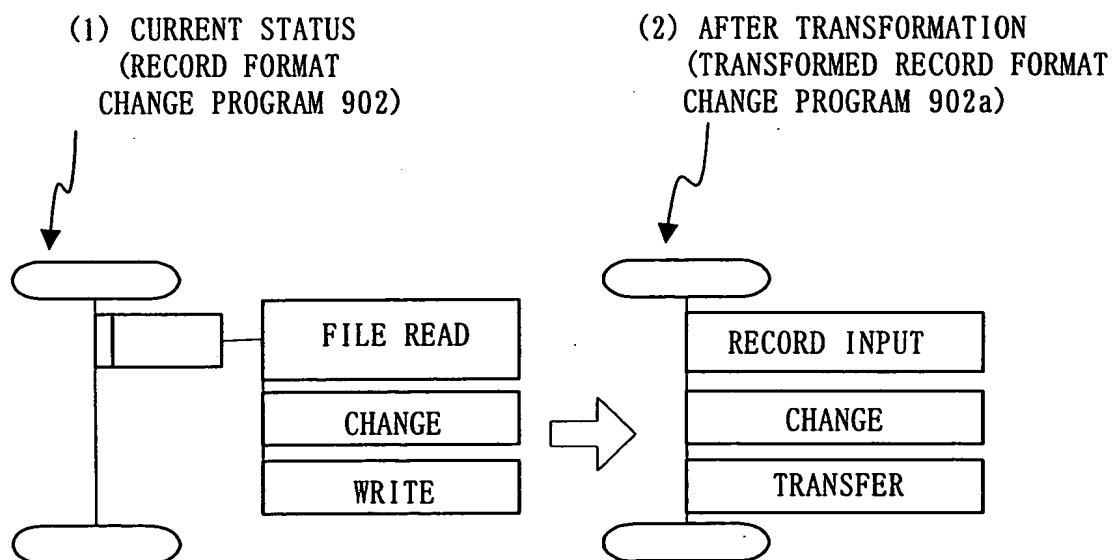


Fig. 70



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Fig. 71

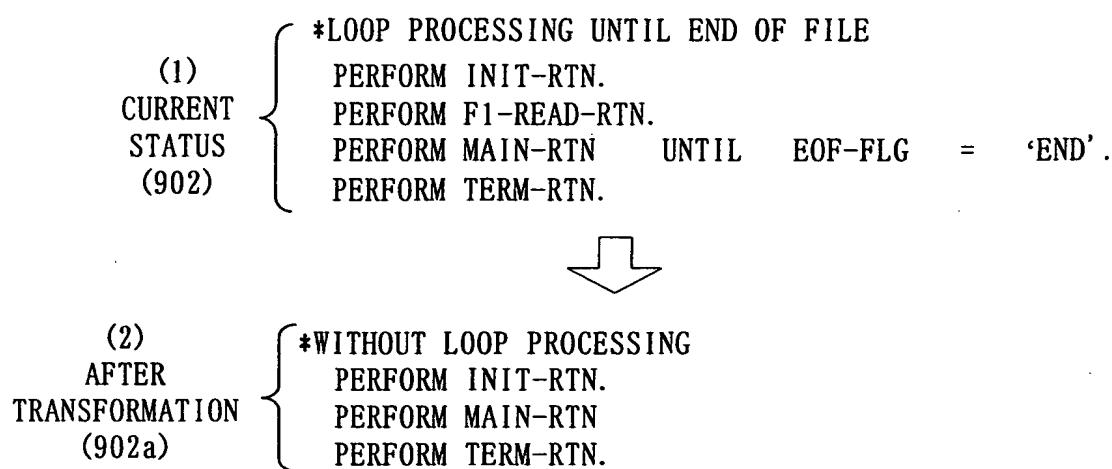
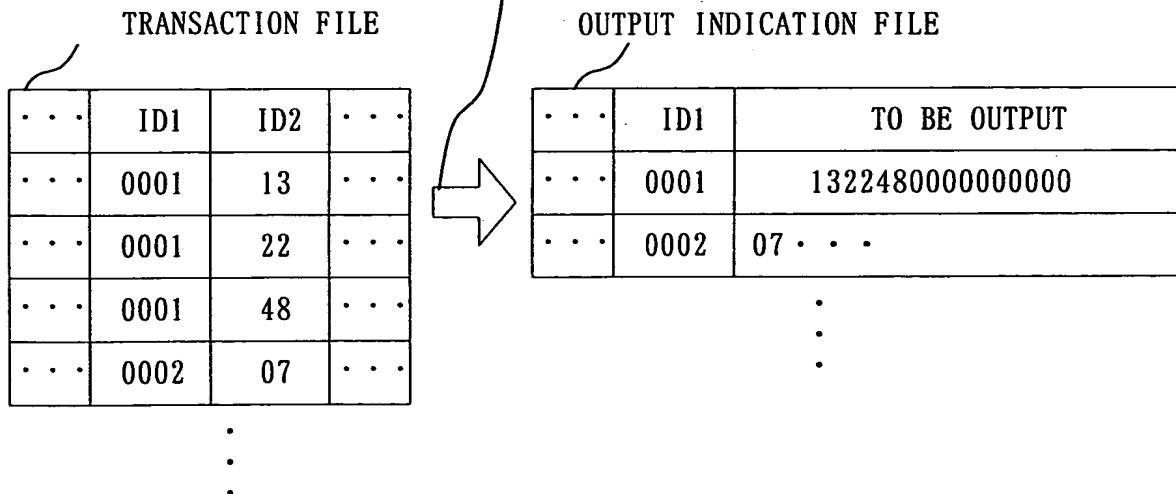


Fig. 72

903 : OUTPUT DATA INDICATION PROGRAM



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Fig. 73

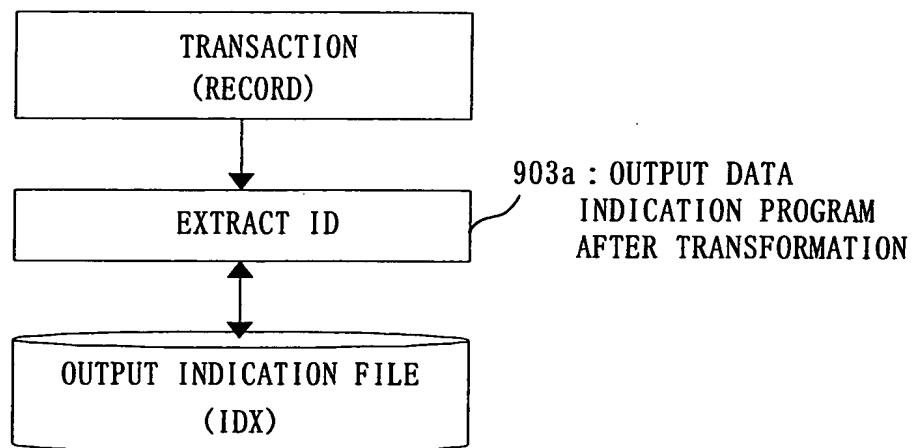
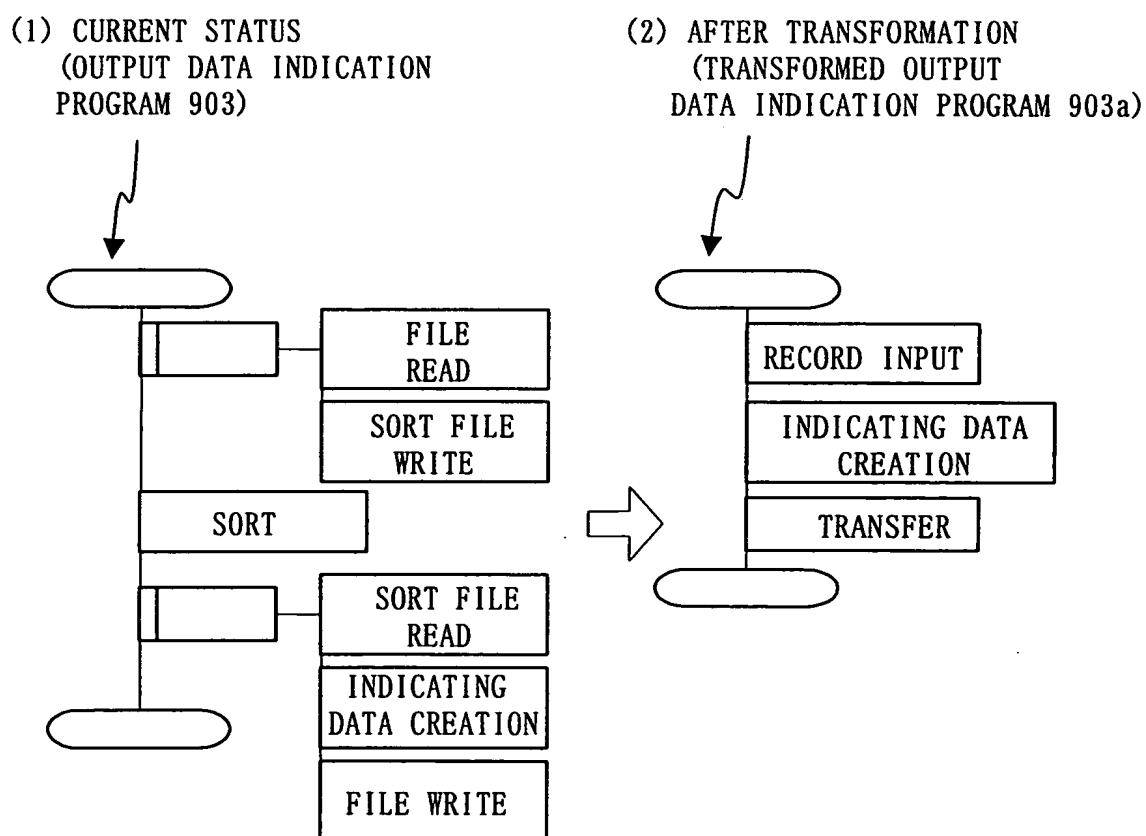


Fig. 74



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Fig. 75

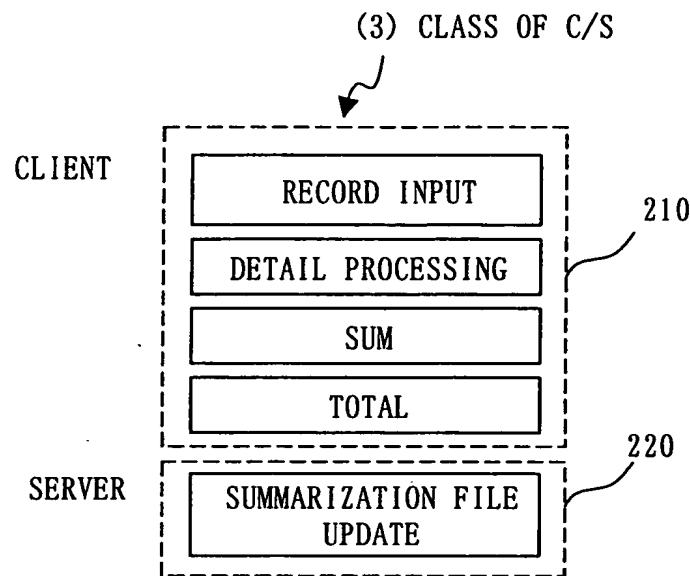
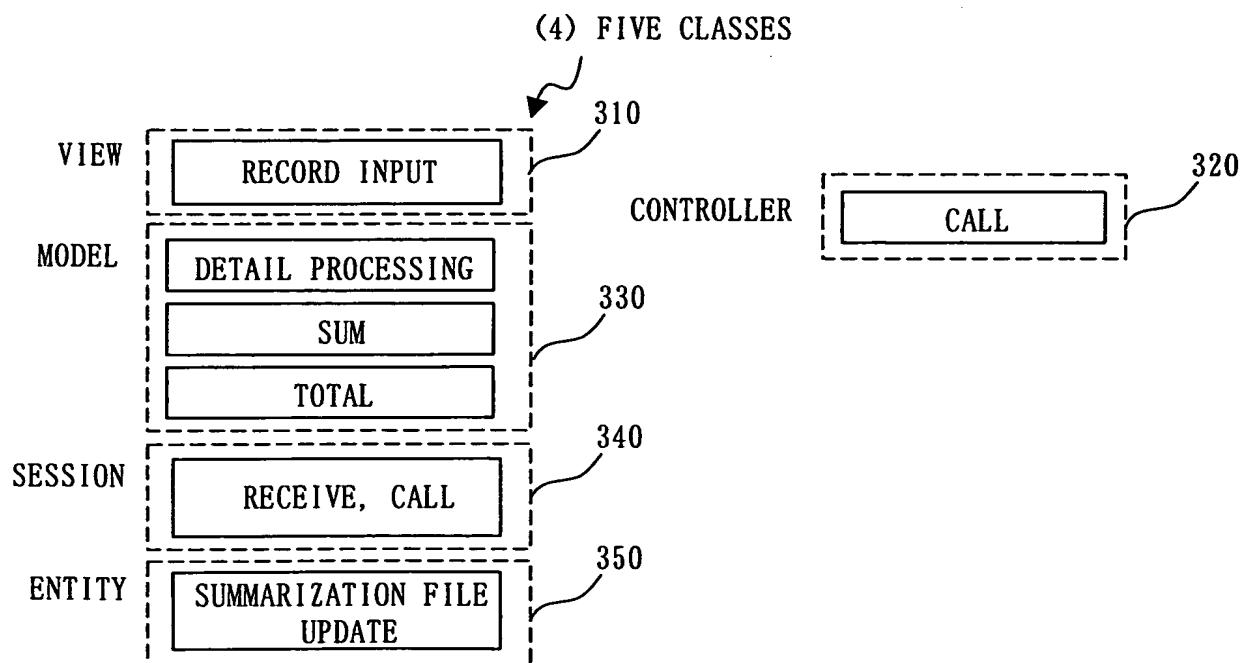


Fig. 76



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Fig. 77

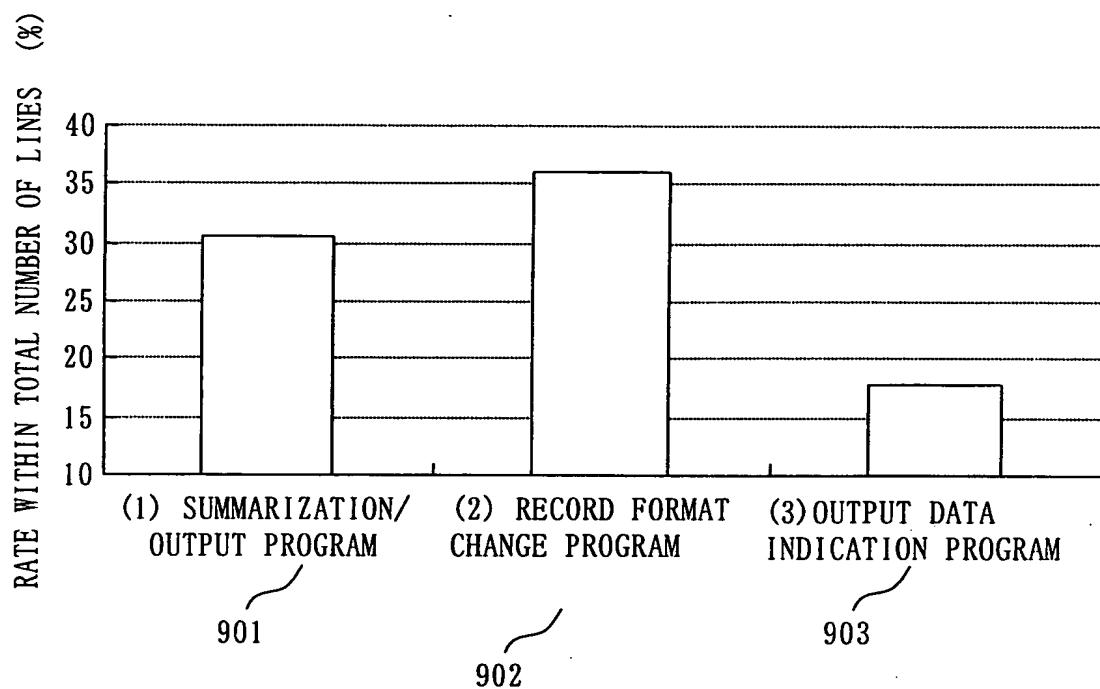


Fig. 78

